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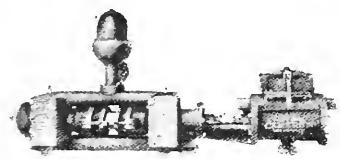
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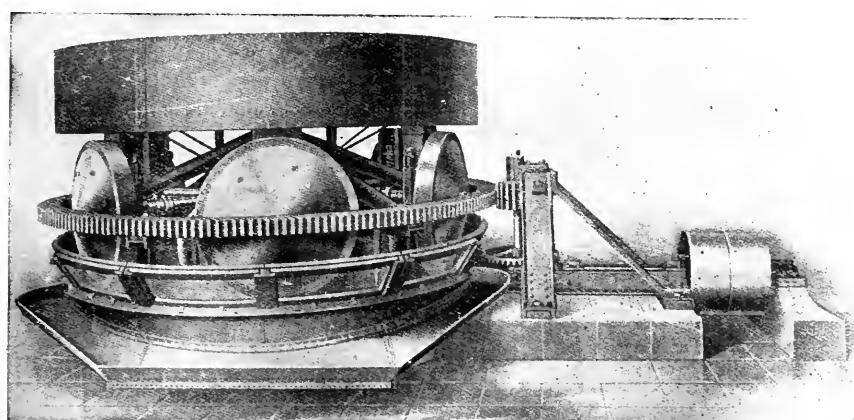
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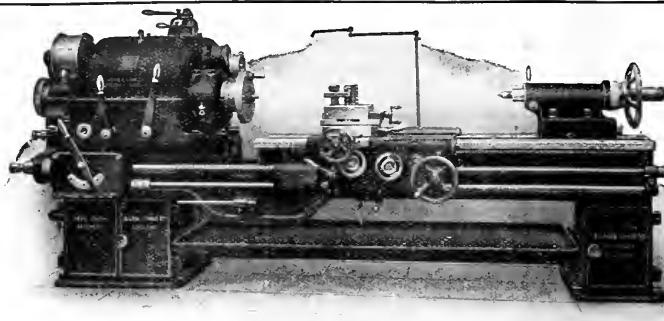
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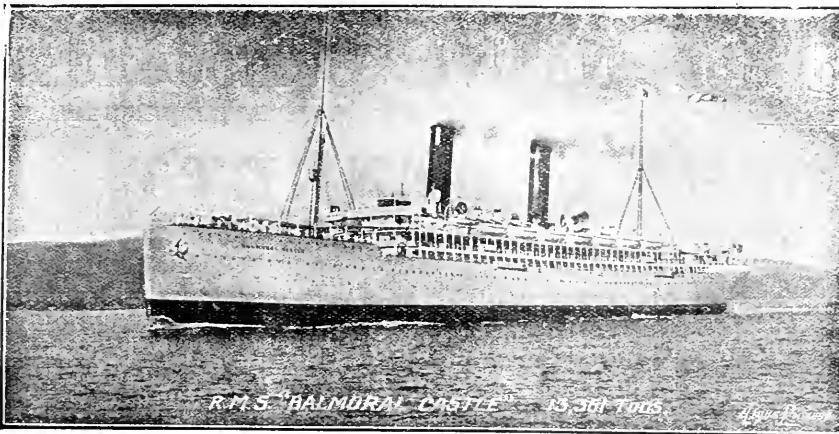
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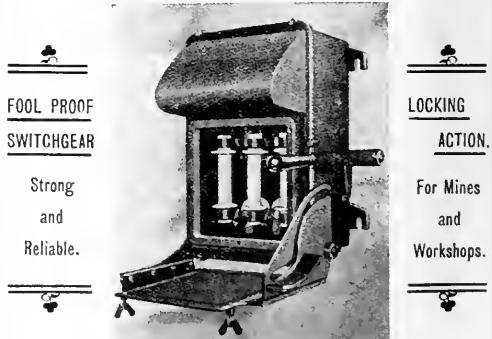
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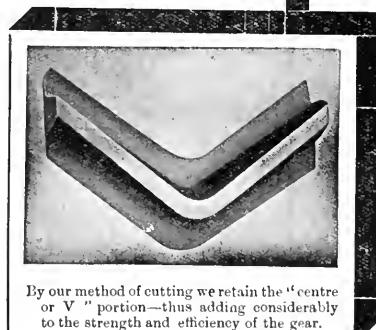
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South African Mines, Commerce and Industries.
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Notes and News.

Important changes in the engineering staff of the Corner House and of the Victoria Falls Power Engineering Company, Ltd., are understood to be imminent. In this connection we may state that Mr. David Gilmour, who was generally supposed to be about to return to the Rand in order to take up an appointment with the Corner House, has left London for Chili, where he has been appointed Mechanical Engineer to the copper mines of the Guggenheim group. It is noteworthy that Mr. Fred Hellman, well known on the Rand, is the consulting mining engineer to the same mines.

* * * * *

The recent death of Mr. "Matt" Spence removes from sight an estimable and genial man who was before the war one of the most "Matt" Spence familiar figures upon the Rand. As an intermediary between the mining houses and officialdom at Pretoria, Mr. Spence, whose valuable services in this direction obtained for him the humorous designation of "the third Raad," was greatly in request. His intimate and peculiar knowledge of the minds of those of the legislative and executive bodies whose assistance and sympathy were needed on behalf of the mining industry, and his tactful and effective methods of dealing with them, gave him a position which was as well filled as it was unique.

* * * * *

We are officially informed that the following cable has been despatched to the company's London office for publication:—"At a meeting with the Chairman of De Beers Consolidated Mines, Ltd., it has been agreed that instead of issuing obligations, as published in the Press on September 7th, 1912, De Beers Consolidated Mines shall pay 12s. 6d. net per share in cash against transfer, with interest at 4½ per cent. from January 1st, 1913, until date of transfer."

* * * * *

Quite the most interesting piece of information we have been able to give our readers for some time is the news that the directors of the New Modderfontein have decided to proceed at once with the erection of a large new mill at the circular shaft of the property. The mill will be run entirely as a separate unit from the present reduction works, and will embody many novel features. The equipment of the circular shaft will be on lines new to the Rand, and following closely on the lines of latest colliery practice. It was hoped that the new plant would provide for direct treatment of the total mill pulp in the Merrill press, but, apparently, this has not been found feasible. We may state that for several months past small-scale trials have been conducted at the Ferreira Laboratory by Mr. L. D. Mills, of the Merrill Metallurgical Company, in co-operation with Mr. F. L. Bosqui, consulting metallurgist of the Rand Mines, Ltd., to test the feasibility of direct treatment of the total mill pulp in the Merrill press. The only preliminary treatment attempted was the regrinding through 150 mesh of about 10 per cent. of the coarse sand and pyrites, with the object of shortening the period of treatment. This regrind 10 per cent. was then mixed with the sand and slime pulp, and introduced into a small press, representing a working section of one of the large machines. In trials on total pulp from the Ferreira Deep, Village Deep and City Deep, a final residue as low as that now reached in practice was obtained in the press in from 12 to 15 hours—this period including the operations of filling, leaching, washing and discharging. It is estimated that this direct treatment will effect a considerable reduction in working costs, and that the initial cost of such a plant will not be likely to exceed one of our standard plants, of corresponding tonnage. The results were so promising that it was arranged to construct at the Village Deep a trial plant to treat 60 tons per day, and plans for this plant were drawn up, the object being to determine whether or not

this method of treatment might profitably be adopted in the new mill at the New Modderfontein circular shaft. Unfortunately, however, it was later found inadvisable to delay the erection of the new plant for a sufficient time to permit of working trials being completed. At the present time, therefore, the question of testing the Merrill process on a working scale is in abeyance, but it is to be hoped that the whole subject may be revived in the near future.

* * * *

Our attention has been drawn to the formation of the South African Association of Analytical S.A. Association of Chemists, which has among its main objects the elevation of the profession of consulting and analytical chemistry, and the promotion of the efficiency and usefulness of persons practising it by compelling the observance of strict rules for professional conduct, and by setting up a high standard of scientific and professional proficiency. The Association can claim to be representative of analytical chemistry within the Union of South Africa, embracing as it does analysts in Government employment, in industrial concerns, in colleges and in private practice. It is unnecessary to enlarge upon the advantage that such an Association will prove to Government departments, corporate bodies and others requiring the assistance of analysts, in view of the fact that membership of the Association guarantees proper qualification to practice the profession. We are indebted to the Secretary, Mr. James Gray, F.I.C., for a copy of the constitution and by-laws, together with details of office-bearers and council for the current year and list of members, and Mr. Gray will be pleased to supply any further particulars.

* * * *

The Manager, Mr. Mitchell, in his report, dated August 27th, recommended the shutting down of Romola Nigel. the 5-stamp battery and the confining of operations entirely to development, either for the purpose of crushing on a larger scale or for subsidiary flotations. He also advised the raising of £10,000 for the development of the Eastern Queens, Claydon and Polar Star mines, and estimated that this sum would open up two more levels in each mine, or down to 400 feet. The result of this, he feels confident, would be that in a year's time the mines would be in a sufficiently advanced state for either of the schemes referred to above. Negotiations for sub-flotation and sale respectively of some of the properties are in progress. In the meantime the battery was stopped at the end of September, and since then development at the Eastern Queens has been exceptionally good, as the Chairman observed at the annual meeting on the 19th inst. The money necessary for development has been provided by the directors as a loan. A scheme for the raising of the £10,000 suggested is under consideration, and will shortly be put before shareholders, unless the necessity for making this provision is obviated by the sale which is in contemplation.

* * * *

The Messina Copper Mine, in common with many other propositions in the outlying districts of The Position at Messina. the Transvaal and Rhodesia, is feeling the drought, but not to any very marked extent. The Limpopo River, in the vicinity of the mine, is now merely a series of pools, and had the new concentrator plant which is to be erected been in use, the management would have been hard pressed to keep it employed. As it is, however, there is no very great demand for water, as the energies of the management have of late mainly been concentrated on the erection of new equipment and development work. Excavations for the foundations of the new plant now have been completed, and the machinery and timber has been ordered. Another important item of work that lately has been undertaken has been the sinking of a new shaft in the vicinity of the present main shaft. Construction trains are now running on to Louis Trichardt, and in a comparatively short period the rails should be laid on almost to Messina, and the day of great expansion in the affairs of that company will then be near at hand.

The Giant Mines of Rhodesia is one of the comparatively few mines in Charterland which can afford to laugh at the present acute drought. Position at the Giant Mines. The company derives its water supply from large pools in the Umfuli River, where powerful steam pumps have been installed. Even in the dry season these pools yield a large supply, and there appears to be no anxiety on the part of the management as to keeping the mill going in so far as water supply is concerned. The position underground appears still to be problematical. Mr. Samuel Weil, presiding at the meeting of the Giant Mines of Rhodesia, held in London this week, dwelt upon the efforts again to locate the faulted lode. He considered that owing to the system of stoping it might be advisable to reduce the grade of ore, which would affect the profit to the extent of about £1,500 monthly. The board would have to consider the rate of dividends to be paid in future. The latest news from the mine revealed quite an important strike. We are not as yet in possession of any definite particulars with regard to the "important strike" referred to by Mr. Weil, and particulars are awaited with the keenest interest. The Giant has to date proved itself one of the mainstays of mining in Rhodesia, and it will be a matter for general regret if the management does not succeed in re-locating the very productive reef body worked in the past so successfully by this company.

* * * *

The Manager of Bellevue Tins, Ltd., writes:—" My attention has been drawn to a quotation you Bellevue Tins. give in your last issue from some anonymous correspondent's letter. That quotation expresses doubts as to the value of my company's property. Now, caution is an admirable quality, and doubts exist with regard to every mining venture, but I would remind you that we have for months past invited public inspection of our property. If my surmise as to the identity of your correspondent be correct, then I am justified in challenging the *bona fides* of any communication from him. I will have pleasure in meeting your correspondent—whatever he may be—on the property, and, if your representative cares to be present, so much the better. If your correspondent cares to reveal his identity, I will have pleasure in meeting him through the columns of your paper or in any other way. You have throughout treated us perfectly fairly through your columns, and the only thing I regret is that you should have published an anonymous and unfounded suggestion of this sort without either disclosing your correspondent or communicating with my company."

* * * *

In three weeks' time the first dividend declarations of Transvaal gold mining companies for the The 1912 Dividend concluding six months of the current Aggregate. year will be announced, and it will then be possible to assess the value of the 1912 gold harvest. For the first six months of this year £3,741,282 was distributed amongst shareholders by Rand companies. In all probability the distribution for the second half of the year will be considerably in excess of that announced in respect of the first six months, and the total for 1912 easily should exceed that of 1911, which amounted to seven and three-quarter millions sterling. Whether the 1912 total will exceed that of 1910, when £8,875,000 was distributed, or not, seems doubtful. The dividend list for the second half of the year will, however, include at least one new name, as the City Deep will declare its first distribution next month. In June last the Bantjes Consolidated and Brakpan Mines announced their first distributions, and it is probable that one, if not both, of these concerns will increase their rate next month. There may be one or two declines, but there is every reason for believing that the increases will more than counterbalance decreases amongst companies that have paid dividends for some little time past. It is thought that the Village Deep further may increase its distribution, and the much-improved outputs and profits recently recorded by Randfontein and the Jupiter may have some influence on the aggregate. As bearing on the anticipation that the Rand dividend list for 1912 will at least exhibit a total substantially in excess of the 1911

aggregate, the following figures as to group profits in 1911 and 1912 certainly are worthy of record:—

	1911.	1912.
January	£843,470	£811,637
February	791,611	812,954
March	825,598	1,000,114
April	843,685	897,968
May	829,702	959,800
June	847,641	1,037,905
July	840,471	1,018,880
August	799,776	1,028,515
September	817,223	1,015,224
October	807,237	1,056,246
November	824,483	—
December	855,758	—
*	*	*

The Gaika Gold Co., for the year ending June 30, made a profit of £24,522, and, adding the balance

Caika Results. previously to credit, and after deducting development account there was a total available sum of £24,494, out of which it is proposed to pay a dividend of 5 per cent., absorbing £13,674 and carrying forward £10,819. All development costs have been written off, although ore reserves have been increased to 57,755 tons of an average value of 15.1 dwts. and 14,000 tons of rubble valued at 3 dwts. The mine is being developed with satisfactory results, and improvements at surface will effect considerable economy. The water supply has been adequate for the full requirements of the mine. There were crushed 34,243 tons for a production of 14,636 ozs., which realised £61,522. There have been numerous changes on the Board, and the offices of the company have been removed to those of Gold Fields Rhodesian Development Co.

* * * * *

It has been found impossible to work the property to advantage; its funds have been entirely

Killarney-Hibernia. exhausted, and the company is heavily in debt. Under these circumstances it has been decided to wind up voluntarily, and the necessary meeting was called for November 5. The Killarney-Hibernia was a flotation of the Consolidated Exploration and Development Company, which became merged in the Gold Fields Rhodesia Developments in exchange for fully paid shares. It would be interesting to know who are the creditors of the Killarney-Hibernia, the loan outstanding at March 31, 1911, having amounted to £112,000.

* * * * *

The death of Captain T. G. Tyson, announced this week, has removed a well-known figure in Kimberley, and will be mourned throughout

The Late Capt. Tyson. South Africa, and an even wider sphere.

Captain Tyson was not only universally known and esteemed throughout the diamond fields; he possessed such a wide circle of friends as it is the privilege of few men to achieve even in the course of a long and strenuous life, and his death has occasioned a gap which will remain as a tribute to his sterling worth and the happy qualities which endeared him to all with whom he came into contact. The shock created by the announcement of his demise in Kimberley and the district will be experienced none the less keenly on the Rand and in every part of this country, and not alone in this country, for the deceased was well known in Europe, particularly in England. Captain Tyson underwent a serious operation early in the present year, which involved the loss of a leg, and for some time prior to that had not enjoyed the best of health. But he was always the same bluff and cheery personality, the same good comrade—nothing daunted his splendid optimism and characteristic good humour. He recovered from the effects of the operation referred to in a fashion nothing short of marvellous, having regard to his advanced age and the fact that in his earlier years he endured no small amount of hardship due to the conditions prevailing on the diamond fields when he figured amongst the first diggers, and the actual privations inseparable from active service in the campaigns of the 70's and early 80's in which he took part. By his passing De Beers loses an able administrator, and Kimberley a leading citizen.

TOPICS OF THE WEEK.

THE GOVERNMENT AND THE MINING INDUSTRY.

DESPITE all the protestations of affection that have lately been exchanged between the Government and the mining industry of the Rand, there seems a marked disinclination on the part of our rulers to move a hand to settle urgent industrial questions. Cases in point are the water and bewaarplaatsen affairs, which the Government professes to regard with that airy detachment with which one views other people's misfortunes. The question of creating a permanent additional water supply for the Municipalities and mines of the Witwatersrand is still urgent. As the result, however, of exhaustive discussions by the Executive of the Chamber of Mines and consultation with representatives of the Johannesburg Municipality, matters have reached a stage which should before long lead to a satisfactory settlement. It must be borne in mind, however, that whatever scheme is decided on by the Rand Water Board, and however quickly the necessary works are put in hand, it will take from three to four years to carry such scheme to the producing stage, and the question arises, how the position is to be secured during the interval. It is known that there are large subterranean resources close at hand which it would take from six to eight months to connect up with the distributing system of the Water Board, but it appears that, as the law stands, we may not avail ourselves of these supplies, and so far the Government has not held out any hope that it would facilitate the necessary alteration of the law to enable the Board to pump from these sources, even for a fixed temporary period. What is going to happen if the Government persists in the attitude taken up so far, and if we have to face another drought is, as the President of the Chamber of Mines explained on Thursday, "not cheerful to contemplate." Mr. F. D. P. Chaplin, the Chairman of the Finance and General Purposes Committee of the Rand Water Board, gave a clear exposition of the position and procedure of the Water Board on the 15th instant, and it is plain that no blame attaches to the Board, seeing that only three years ago the Board was quite unable to find customers for the water then at its disposal. Clearly, too, a scheme involving the expenditure of about one and a quarter millions and imposing a liability on every ratepayer along the Reef and every shareholder in every gold mining company, cannot be undertaken hastily or without very careful consideration and study. Everyone, therefore, will join with the Chamber of Mines in hoping that the Government will reconsider its decision and will assist the Rand Water Board not only in the matter of the necessary temporary supply but also in the matter of the legislation which will be necessary to enable the Board to carry out the proposed catchment scheme.

The bewaarplaatsen question is no less pressing. At the meeting of the Chamber of Mines on Thursday, Mr. M. G. Elkan reviewed it very fully. It may be remembered that the Select Committee on Public Accounts, which issued its seventh report to Parliament in June, 1912, dealt, among other things, with the question of the allocation of receipts in respect of the disposal of the rights to mine underneath bewaarplaatsen, machine stands, etc., and recommended "that the question of the disposal of such proceeds be submitted to Parliament for its decision without undue delay." Having regard to this report, the Chamber of Mines has recently addressed the Government on this subject. As long ago as 1896 the Government of the late South African Republic enacted by resolution of the First Volksraad that when the prohibition against undermining bewaarplaatsen, etc., should be removed, such undermining rights should be sold to the highest bidder by public auction and that half of the proceeds of the sale should be allocated to the State, and the other half to the freehold owner of the ground affected. At that time the Chamber of Mines was of opinion that owners of the surface rights should be given a preferential right to the undermining rights, and made unsuccessful

representations to that effect in 1897 to the Industrial Commission, and again in 1898 it memorialised the Government in the same sense. A reply was received from the Secretary to the First Volksraad on the latter occasion, enclosing a copy of the report of the Memorial Commission (to which the Chamber's representations had been referred), and stating that the report had been approved by the First Volksraad. The report stated that seeing that the First Volksraad by its resolution of 1896 had already decided this question, the Commission did not desire to propose any alterations, and regarded the matter as settled. In that year, 1898, a new Gold Law was passed repealing all previous laws, with the exception of the First Volksraad Resolution, to which we have already referred, which was specially preserved. In 1903 a Draft Ordinance was published amending the Gold Law of 1898, and this draft was referred to a Select Committee of the late Transvaal Parliament. This Committee, of which Mr. Hull, the late Minister of Finance, was a member, issued a draft in which it provided that the net proceeds of the sale of the right to prospect and mine for precious metals underneath a bewaarplaats, machine stand or water-right shall be divided equally between the Crown and the freehold owner of the land affected; and the report states that in respect of those provisions the Committee was unanimous. In 1908 the late Transvaal Parliament passed the existing Gold Law repealing the law of 1898. In this Act it is laid down that the total moneys accruing to the Crown under the lease or other contract disposing of the undermining rights of bewaarplaatsen, etc., should be paid by the Treasurer into a special account, and set aside by him pending direction of Parliament. In the course of the debate on that Bill the Minister of Mines undertook to appoint a Commission to investigate the question of the allocation of the proceeds derived from the disposal of such undermining rights. Accordingly, in 1909, the Transvaal Government appointed the Bewaarplaatsen Commission to consider this question. The Commission was a strong one, and consisted of Mr. Esselen, K.C., Mr. Gregorowski (now Mr. Justice Gregorowski), and Mr. Fleischer, the present Registrar of Mining Rights. It unanimously recommended that the only class of person entitled to receive a proportion of the total moneys accruing to the Crown from the leasing or other disposal of rights to mine underneath bewaarplaatsen, etc., is the registered owner of the freehold of those places, and that their proportion should be 50 per cent. The Chamber of Mines, therefore, has made representations to the Government, and has urged that this vexed question should be settled once and for all in the ensuing session of Parliament by putting the above quoted finding of the Bewaarplaatsen Commission on the Statute Book. Both water and bewaarplaatsen questions are alike, in that they embrace issues of vital importance to the industry. Though nothing has been left undone to bring this home to the Government, apparently the latter either cannot or will not see it in the same light. The whole thing is regrettable, and—to take the lowest ground—bad business on the part of a Government professedly bent on maintaining the credit of the country.

SOME FRANK REVELATIONS.

ALTHOUGH the shareholder who sits in his arm-chair in London and furnes over the alleged iniquity of Rand boards of directors, and the equally unkind critic who looks out gloomily upon the Reef from his window in the Johannesburg Stock Exchange, are unanimous in deplored a want of candour at annual company meetings and in quarterly reports, it cannot be said that reticence is the universal and customary attitude of directors. Of late, especially, we have had quite a demonstration of openness and frank confidence in the good sense of those whose investments in Rand ventures make it necessary to attend statutory meetings. It is not often, however, that there has been shown so generous a response to the craving of the average shareholder for general information as was given by Lord Harris at the last annual meeting of the Consolidated Gold Fields of South Africa, Ltd. It may be remarked, also, that never

before, in our knowledge, has the vexed subject of values in the deeper levels of the Rand been so directly and definitely commented upon as it is reported to have been by the chairman of this great undertaking. In dealing with the question of working costs, Lord Harris "pointed out," says Reuter, "that the reduction of working costs had been nullified by the lowering of the grade of ore." These remarks applied, presumably, to the properties of the Consolidated Gold Fields. The working costs of these mines have been reduced, scientifically and in other ways, to a figure which reflects vast credit upon the technical and administrative staffs of the corporation, so that while the average working costs of the Rand for the past year were 19s. 2d. per ton milled, the average working costs of the Gold Fields mines were 14s. 9d. per ton milled. "A great disappointment had been the falling-off of receipts," observed Lord Harris, "despite the reduction in working costs by 9½d. per ton. . . . The yield per ton had decreased by 2s. This, with the reduction in the working costs, meant a falling-off of receipts by 1s. 3d. per ton, or a total of nearly £200,000." One cannot but be cautious in interpreting the words of a cablegram under any circumstances, and it is especially necessary to be careful in drawing conclusions from a condensed summary of what was probably discussed at some length, or at any rate with explanatory additions. It seems clear, however, from the use of the word "nullified" in the connection quoted above, that the intention was to say that there had been an actual falling-off in the grade of the Gold Fields' mines as a result of natural conditions, and not in consequence of any set policy of wholesale mining. It is possible, of course, that other words were used, but at least some equivalent in sense to "nullified" must have been employed if remarks relating to the lowering of the grade are to be intelligible. A scheme of low-grade mining is obviously arranged to facilitate a policy of low working costs, not to nullify it, or oppose it. The only inference to be drawn from this part of the speech is that the grade of the mines has deteriorated, and, as we have already observed, there is no precedent within our knowledge of a similar statement having been made at any other company meeting, least of all at a meeting of the standing of that of the Consolidated Gold Fields. The absence of any explanation to the effect that the falling-off in grade was probably only temporary suggests that it is a phenomena which has been of too persistent a kind to be qualified in this way. The importance of the information cannot easily be overestimated, and it would be interesting to have the equally clear views of other groups upon the subject. Lord Harris' candour was apparently not limited to statements about the grade of his company's mines. It found a place in his review of the mining policy of these undertakings. "There were two methods of mining," he said, according to Reuter. "One was to pick out the eyes of the mine and make temporarily a good showing, leaving the less profitable ore behind, or to work fairly and straightforwardly as they had been doing, and thus get a stable profit year by year. He sympathised with shareholders who were unable to wait, but the company adhered to the policy of fair mining, though, if it could be proved that the best interests of the shareholders would be best served by a system of selective mining, they were quite prepared to change their opinion. They were taking expert advice on this important question." If these observations mean anything they mean that what is euphemistically known as "selective mining" practically amounts to picking the eyes out of a mine. "Selective mining" has been lauded as a policy eminently suited to Rand conditions, and has been adopted to a considerable extent, it is said, in some of the leading mines along the line of Reef. If this kind of mining—which was declared at its inauguration to be exactly what its terms convey, in their best, and most legitimate sense—is really the other kind, in the opinion of one who may be presumed to have reliable first-hand information about it, it is clearly desirable that some pronouncement upon the point should be made by those who gave the public their definition of the phrase when it was first brought into use. Candour such as that of Lord Harris should prompt, nay demand, an equal degree of frankness in other quarters.

RAND ORE RESERVES AND MILLING CAPACITIES.

Tonnages More than Three Years Ahead of Milling Requirements—Ill-Effects of Premature Crushing Not Known on the Rand—Figures for Different Groups and Different Mines.

THE statement that the development position, the quantity of payable ore reserves fully blocked out and fully valued, and the proportion that these reserves bear to the actual milling requirements constitute essential factors in the sound working of a mine, needs no emphasis from us, for it is a fully accepted principle throughout the length and breadth of the mining world. Premature crushing has been the undoing of many a promising and intrinsically valuable property. In the outlying districts of the Transvaal and in Southern Rhodesia there are large numbers of properties, not a few of which would under good management become profitable concerns, and which have lapsed into the slough of despond chiefly because no businesslike methods of underground exploitation were practised, and because milling operations began before any really material tonnage of ore had been blocked out.

THE RAND'S SOUND POLICY.

On the Witwatersrand happily there has been very little premature crushing. Particularly of recent years has the determination to keep ore reserves well ahead of the mill been manifested. Whilst crushing equipments have been extended and the delivery of a larger tonnage each shift to the mill bins has been called for, the necessity for maintaining ore reserves well ahead of milling requirements thoroughly has been appreciated and well carried into practical effect. To-day the Rand is estimated to contain between 100,000,000 and 110,000,000 tons of blocked out and valued ore, and this at the present rate of crushing represents sufficient pay rock in reserve to last the combined mills of the Main Reef series for over three years.

AN EXCEPTIONAL FIELD.

The Witwatersrand undoubtedly lends itself to a policy of rapid and economical development. Although considerable fluctuations in values over small areas are to be observed in the majority of assay plans, a remarkable consistency over large sections is noticeable, an uniformity which, as a matter of fact, is not paralleled by any other gold field. This characteristic in conjunction with the general soundness of mine management that the Rand may now lay claim to, has resulted in the majority of the larger mines having reserves which, even if all development operations were ceased immediately, would enable the companies concerned to maintain their present rates of output and profit for three or four—in some instances even for five or six—years to come. Needless to state, the cessation of development, except at mines well nigh worked out and with no more development to be undertaken, is not a consideration that calls for a moment's serious thought. Fluctuations in labour supply result, of course, in varying proportions in different periods as between tonnage milled and tonnage developed. But taking figures over any fairly lengthy period, it becomes abundantly clear that one of the foremost planks in the mining policy of the controlling "Houses" is the maintenance of ore in reserve.

The whole subject is of such vital interest and importance that we herewith present a table which shows the ore reserves of the mines according to the latest authenticated returns, together with milling capacities, in the month of October, and the period of time that the reserves in question would last the mills for:-

Central Mining and Investment Corporation.

Mine.	Equipment	Rate	Payable	Life of
	Stamps.	Tube	present	Reserves,
	Mills.	Crush-	Ore	basis,
		ing.	reserves,	Months
Bantjes Consolidated	85	3	21,659	896,087
City Deep	150	9	43,100	2,078,805
Crown Mines	660	26	167,800	10,124,072
Durban Roodepoort Dp.	100	3	25,570	1,288,071
Ferreira Deep	225	7	54,900	2,162,411
Goldenhuis Deep	300	7	48,500	2,262,840
Modderfontein B.	80	5	32,160	2,355,700
New Modderfontein	180	7	47,400	3,900,000
Nourse Mines	260	7	56,200	1,969,000
Robinson	250	6	53,200	2,833,794
Rose Deep	300	7	68,100	3,679,160
Village Deep	180	7	50,100	2,159,702
Village Main Reef	220	6	42,500	1,775,175

Consolidated Gold Fields of South Africa.

Jupiter	100	7	42,800	1,089,000
Knights Deep	400	9	100,400	2,411,414*
Robinson Deep	160	8	50,100	1,141,000
Sinner Deep	130	8	55,200	1,312,000
Sinner and Jack Prop.	320	7	75,200	2,680,000

Miscellaneous Companies.

East Rand Proprietary	820	25	148,500	6,716,605
New Kleinfontein	210	4	51,000	1,146,531
Brakpan Mines	150	7	60,900	1,925,346

Randfontein-Langlaagte Group.

Langlaagte Estate	200	5	54,751	1,281,307
Randfontein Central	750	29	217,089	5,658,859

A. Goerz & Co.

Geduld Proprietary	50	2	13,960	607,300
Lancaster West	100	3	20,750	172,700
Princess Estate	60	5	20,000	656,500

S. Neumann & Co.

Consolidated Main Reef	100	3	22,072	610,680
Knight Central	110	3	24,940	644,300
Main Reef West	90	3	17,827	685,720
Witwatersrand Deep	245	4	38,350	1,436,202
Wolluter	120	4	28,800	808,780

Johannesburg Consolidated Investment Company.

Consolidated Langlaagte	90	3	34,700	1,619,647
Ginsberg	80	1	15,215	367,646
Glencarne	160	—	21,567	925,000
New Primrose	160	—	25,400	423,311
New Rietfontein	120	2	15,320	361,484
New Unified	60	1	11,585	288,343
Witwatersrand	220	—	38,870	1,225,084

General Mining and Finance Corporation.

Amora West	80	—	11,458	345,578
Cinderella Consolidated	80	3	18,320	740,157
Van Ryn	140	6	39,230	1,655,910
Meyer and Charlton	75	2	14,116	312,336
New Goeth	120	4	26,775	962,575
Roodepoort United	50	4	30,502	448,800
West Rand Consolidated	100	4	29,050	1,003,000

RESERVES POSSIBLY DISPROPORTIONATE IN SOME INSTANCES.

An examination of the above list shows that the amounts of ore in reserve in proportion to milling capacities vary considerably at different mines. In one or two cases one is

* Including Sinner and Jack East Reserves.

tempted to suggest that the accumulations of ore in reserve, representing as they do a vast amount of capital, call for immediate increases in milling capacity, in order to "unlock" further sums of money. Admittedly the maintenance of ore reserves very far ahead (that is very far ahead when considered on ordinary lines of commerce and interest bearing) of milling requirements is a good one, but there is, we think, a happy medium between real stability and the accumulation of reserves vastly in excess of the essential

requirements of a sound position. Different mines have, of course, to be considered from different points of view. One cannot generalise where capitals involved, profit in sight, lives and other factors vary so greatly. The outstanding feature of the table given above is, we think, the sound principle that has been brought to bear on Rand development policies, a principle that has resulted in the majority of Main Reef companies attaining to a position of unexampled stability in so far as gold mining enterprise is concerned.

THE YEAR WITH THE MESSINA COPPER.

Improved Development—New Plant in Course of Erection—Railway Progress.

The report of the Messina (Transvaal) Development Company, Ltd., submitted to the meeting on the 12th inst., covers the year ended 30th June, 1912. The profit and loss account shows a debit balance of £10,656, making a total debit of £28,322. The property consists of the freehold and leasehold farms, representing a total of 22,432 acres, standing in the company's books at a cost of £111,671. The 200 coal claims referred to in the last annual report have, after investigation, been abandoned, and an option has been secured over a large block of coal claims situated about 25 miles south-west of Messina. In view of the completion, at an early date, of the railway now under construction, the operations at the mill were limited to treating ore obtained chiefly from development, and efforts were concentrated on increasing the reserves of ore by opening up the mine at further depth as rapidly as possible so as to be in a position to undertake a large output on the completion of the railway. In regard to the development on the north lode, since last year's report, the consulting engineer states:—"A most important enrichment occurred at fifth level, whereby the granite has become highly altered and mineralised from wall to wall of the lode for a width of 75 feet. A crosscut through the ore body gives an average assay value of 19.5 per cent. copper for this width, the values being fairly uniform throughout. As will be noted from the table of assay values, the fifth level, for 236 feet sampled, averages 23.6 per cent. copper, which is an exceptionally high average for such a continuous footage." And further, with regard to the eighth level:—"The shaft and hanging wall portion assays 18 per cent. copper for a distance of 120 feet, and the footwall portion assays 19.7 per cent. copper for 150 feet sampled. Since the end of the year a crosscut has been put through the footwall portion, exposing lode for 50 feet in width, having an average assay value of 12.5 per cent. copper. The hanging wall portion at shaft shows a width of 27 feet of ore, assaying 17 per cent. copper—making with the

footwall portion a total width of 77 feet of ore, averaging 14 per cent. copper." The development of the other lodes in the mine has been equally satisfactory. Owing to the satisfactory results obtained during the year, and the favourable outlook of the mine generally, and in order to further increase the output of ore to 12,000 tons per month, the directors authorised the sinking of another three-compartment shaft adjacent to No. 4 shaft. A total of 6,781 feet was driven, raised and sunk in the various workings. Of this footage, 2,500 feet has been actually driven on the lodes, of which 1,533 feet gave an average assay value of 13.1 per cent. copper over a width of 60 inches. This is regarded as one of the most satisfactory features of the development operations during the year. The estimate of actual ore at 30th June, 1912, blocked out within the developed sections amount to approximately 170,000 tons of 10 per cent. copper, an increase of 50,714 tons of ore, after allowing for the extraction of 10,317 tons during the year. The probable and possible ore is estimated at a further 330,000 tons down to tenth level, making a total of 500,000 tons of ore. The extension of ancient workings at surface to the east and west of the present developed sections of the mine and also the satisfactory results obtained in the same directions underground by driving on the lodes indicate that in the near future a large tonnage of ore will be added to the known reserves. A new concentrating plant is now being erected, designed to handle about 300 tons of ore per day, and this, together with additions to existing mill, will be capable of dealing with 10,000 tons of sorted ore per month. The extension of the Pretoria-Pietersburg line from Bandalier Kop to Louis Trichardt has now been opened for traffic, and the continuation of the line to Messina is being actively carried on by the Government and should reach the Messina mine by May, 1913. The development of the coal-bearing area will be under option and through which the railway line will pass has opened a seam of workable quality, suitable for steaming and smelting purposes.

East Rand Proprietary Mines.

The report for the quarter ended September 30 states. Revenue, £715,497 10s. 4d., or £1 13s. 2d. per ton from 301,525 tons crushed; cost, £176,283 8s. 3d., or £1 1s. 2d. per ton; profit, £269,214 1s. 10d., or 12s. per ton; total £11,171,267 8s. 3d. The approximate cash position on September 30, less £1,000 of £182,253 13s. 6d. The actual expenditure on development amounted to £37,662 9s., as against £67,177 10s. per ton in the working costs (at 3s. per ton milled) giving a balance of £29,845 1s., which, added to the balance at 1st of 30, 1912, of £70,519 3s. 8d., gives a total of £100,361 1s. 8d. owing to the credit of development expenditure of 1s per ton for 30, 1912. This amount has to be set off against the and therefore is not included in the cash position. The Board would draw the attention of the reader to the fact that the reason of the confirmed enlargement of funds to the credit of development expenditure is owing to the impossibility of carrying out the full amount of development until such time as the underground pumping plant is installed to deal with the

water anticipated from cutting the Witwatersrand Deep dyke. This matter was referred to by the superintending engineer in the last annual report. The Witwatersrand Deep Co. is now pumping approximately 55,000,000 gallons per month. The pumping scheme is making steady progress. Eight pumps (two per section), each capable of dealing with 60,000 gallons per hour, are on order, and delivery is expected to commence in November, and to be completed in March, 1913. As the pump chambers and sumps are practically ready, it is hoped to have sufficient pumping capacity installed by March next to allow the dyke to be intersected. After intersection and drainage of accumulated water has been dealt with, development operations south of the dyke in the western portion of the property will be carried on uninterruptedly. The Hercules shaft has now reached a depth of 3,518 feet, 365 feet of sinking having been accomplished during the quarter. The decrease in the tonnage milled as compared with the previous quarter is due solely to the shortage of native labour, which during the month of September was acute. The prospects of an increased supply are promising.

ZINC IN THE TRANSVAAL.

The T.C.L. and the Witkop Mine—Reduction Plant to be Erected—Slow Advance of the Transvaal Zinc Industry.

An interesting item of news occurs in the last interim report of the directors of the Transvaal Consolidated Land and Exploration Co., to the effect that development has given encouraging results at the Marico zinc workings, and that the designs for the reduction plant are in hand, and, as soon as they are passed, tenders will be called for. The history of zinc ventures in the Marico district, of which the most prominent in several ways is the Witkop mine, serves to demonstrate how difficult it is to interest capital in anything outside the Rand, and, having worked up an interest in this direction, how tedious and slow is the process of preliminary exploratory operations and the decision to commence productive business. As far back as the middle of December, 1907, it was recorded in this journal that "there is so much intrinsic economic strength in the position of the zinc and lead ventures now being exploited at the head-waters of the Groot Marico River, in the Zeerust region, that it is gratifying to learn that the shipment of ore—for a time carried on by the African Mining Corporation—is likely to be resumed at once." In February, 1908, it was reported that 50 tons of zinc blende were being shipped weekly by the African Zinc Corporation, the ore being stated to yield in bulk 55 per cent.

PROSPECTS IN 1908.

On the 17th October, 1908, a report by Mr. M. Torrente upon the operations of the Blaue-Witkop Company, Ltd., who had taken over the property from the African Mining Corporation, was published in the *S.A. Mining Journal*. We had no official intimation on the point, but, if memory serves us correctly, the work was being carried out at that time under the auspices of the Transvaalsche Bank. The capital of the company was £10,000, of which £2,500 represented working capital, and 2,500 £1 shares were in reserve. A scheme of development was said to be in progress as a result of which a comparatively large section of the mine would be opened up by the end of the year. Since most of the work was being carried out in blende, the ore recovered during the process was expected to be sufficient to show a profit upon the work done, and it was estimated that at the existing price of zinc a net profit of £6,000 would be in sight within the period mentioned. It is interesting to note what Mr. Torrente had to say about the economic position. His figures were a fairly conservative inference from the results of actual operations on a moderate scale. "Taking zinc at the value of £20 per long ton," he remarks, "the values would work out as follows: One ton of ore, zinc contents 60 per cent., value £12; loss in smelting 1,344 lbs. zinc at 20 per cent., 268 lbs., leaving 1,076 lbs. zinc, value £9 12s.; less mining, shipping, smelting and other charges, say £5 12s.; net profit per ton, £4." Although reticence was a prominent characteristic of the board at the time, and has been so pretty consistently ever since, by the way, there is no doubt that they were making excellent working profits. The principal obstacle to successful operations on an adequate scale was the want of working capital. The mine itself gave good indications of being an extensive and rich deposit; but, in spite of favourable reports and an encouraging zinc market, it does not appear that the venture was able to make much headway. It is undoubtedly due to the dogged tenacity and sanguine views of Mr. F. Blaue, of the Blaue-Witkop Company, that the undertaking was kept afloat in the face of numerous difficulties until the interest of the Corner House was secured and funds were provided for the further exploratory work which was required. Even then the advance was not rapid, considering the nature of the proposition and its prospects. Some time ago we announced that a shipment of zinc had been sent to the United States for testing purposes, and that it evidently had been forwarded

from the Blaue-Witkop mine. The results of the test were presumably satisfactory, and the determination on the part of the Transvaal Consolidated Lands to put up a reduction plant show that a policy of progress has been decided upon. Since we have, from time to time, for several years past drawn attention to the prospects of this mine, it is gratifying to find that what may be considered a practical test of its capacity is about to be made under favourable conditions as regards finance.

THE SPELTER MARKET.

Among the commercial metals, spelter, it is asserted, is the only one whereof the market is not dominated by one paramount factor. The forces of supply and demand have free sway. It is then worth noting that whereas the price quoted in 1908, as mentioned above, was £20, it was, at the beginning of 1911, £23 8s.7d. in London, and at the end of the year £26 8s.9d., the average for the year being £25 2s.1d. Recent advices from England show that demand continues on a large scale, especially from the galvanising trade, and that prices ranged from £27 12s. 6d. ordinary to £28 5s. specials. Obviously a zinc mine that can produce blende concentrates of the kind referred to in Mr. Torrente's report, and at a cost approximate to that recorded in the same report, has prospects of a particularly favourable kind. As we have already remarked, reticence has invariably marked the communications of those connected with the zinc industry in the Marico district. We are, therefore, unaware how far development has decided the question of the size, persistence and value of the ore in the Witkop mine.

GEOLICAL CONDITIONS.

As described in a report of the Geological Survey for 1909, "the ore is confined within a more or less circular area defined by an outcrop of highly altered dolomite. The metamorphism has practically converted the dolomite into a tremolite rock, which outcrops as a slight ridge, enclosing a more or less circular area, measuring roughly 170 feet from north to south, and some 160 feet from east to west. The tremolite rock, which forms the walls of a cone-shaped pipe, is only a few feet in thickness, merging into the less highly altered dolomite on the outside. On the inside, however, it is usually followed by a band of zinc-blende of varying thickness. The walls of tremolite at the 50 feet level dip outwards from the circle at an angle of 75 degrees, the area included within the containing walls of tremolite thus increasing with the depth. The zinc-blende which follows the hanging wall very consistently varies in width from 1 inch to 2 feet, and is sometimes composed of a double layer of ore, between which tremolite occurs. This zone of blende sends off veins towards the centre of the circle. Whether these pinch out or lead to large pockets and lenses of ore has still to be proved. By following a thick vein of zinc-blende leading towards the centre of the circle at about the 20 feet level a large chamber of massive ore was found, which was worked out and found to be of circular shape with no continuation (as far as blende is concerned) towards the centre of the main circle." As an explanation of this occurrence the Geological Survey adds: "It is possible that the circular nature of the deposit and of metamorphism in the dolomite is the result of thermal action having proceeded not so much from an extended fissure as from one point in a fissure, since the metamorphic changes around the edge of the circle are more or less uniform to equal distances from the centre of the circle representing the focus of the metamorphosing agency." The occurrence of the ore around the walls of the pipe and in irregular masses within the tremolite filling towards the centre of the pipe, rather suggested at that time that there had been a cone or dome-shaped subsidence in the dolomite, and that the spaces thus left around the walls of the subsidence, and

in the broken masses of the fallen rock, were afterwards filled by means of ore-bearing solutions which thus found an easy channel from below. The area mentioned by the Geological Survey would be equivalent, in diamond mining measurements, to less than 25 claims, and the points of importance, as regards more recent operations, are whether the area has increased, and whether the ore contents of the

pipe have remained sufficiently abundant. A similar pipe body occurs on the farm Buffelshoek, immediately to the north of Witkop. If memory serves us well, its area was rather greater than that of the Witkop pipe. Little work had been done upon it at the time of our visit, some four years ago, but it is said that recently Mr. F. Blane has opened it up to a considerable extent.

PROGRESS OF THE GOERZ GROUP.

Important Developments at the Princess Estate—The Firm's Interests in the Further East Rand Area.

In the history of the Rand "groups" during the year now drawing to a close the improvement in the fortunes of the house of A. Goerz & Co. has to be chronicled. With the virtual exhaustion of the Geldenhuys Estate and its absorption by the Geldenhuys Deep, and the declining outputs of the May Consolidated due to the approaching termination of the company's highly successful career, the returns of the mines under Goerz control have of recent years exhibited considerable decline. Moreover, the unsatisfactory state of development in the Lancaster properties and the difficulties encountered at the Princess Estate incidental to the reorganisation of that property consequent on amalgamation with the Roodepoort Central Deep, further have tended to restrict both production and profit. This year has, however, witnessed a distinct change for the better in the affairs of the house of Goerz. The highly satisfactory assays and reef widths disclosed in the initial development of the Modderfontein Deep Levels have made it a practical certainty that, in a year or two, the Goerz group will possess a producer in the Modderfontein area the returns of which will compare most favourably with the other Modderfontein mines. Geduld developments have improved substantially, and at the Princess Estate ground of much better value is being exploited in the central section. Accordingly it may be taken for granted that, despite the cessation of milling operations in the near future at the May Consolidated, the outputs and profits of the Goerz mines will show expansion rather than contraction in so far as aggregates are concerned. It is, of course, to the Further East Rand that the firm of A. Goerz & Co. will have to look for its principal expansion. Geduld should be declaring materially larger outputs and registering appreciably greater profits next year, and the Modder Deep Levels will, by reason of the excellent scheme of exploitation decided on for this proposition, be in an advanced state of development at an early date. It would, of course, be premature to write of the type and capacity of reduction equipment to be erected there, but the mine is a large one, and will be capable of supplying a big plant.

PRINCESS ESTATE.

Although it is principally from the Further East Rand that the Goerz group anticipates the greater amount of expansion in outputs and profits will be secured, it is a highly important fact that in the Near West Rand or Roodepoort section the Princess Estate is now looking very much better and the prospect of this mine returning to the state of prosperity enjoyed some little while ago is considered good. As this property has registered rather disappointing returns since its absorption of the Roodepoort Central Deep claims, particular attention may be directed to the substantially improved position obtaining there. The betterment is well indicated in the quarterly reports issued in respect of this year's operations. Thus in the first three months of the year the payable ore developed was estimated at 12,419 tons. In the second quarter 25,405 "pay" tons were exposed, whilst in the months of July, August and September there were 69,513 tons added to the payable ore reserves. A closer examination of the development particulars shows that in the first three months of the year the South Reef development disclosed a value of 7.12 dwts. over 21 inches. In the next quarter the value improved slightly to 7.7 dwts.

and the width to 25 inches, whilst in the three months ended with September the value over 25 inches was 9.23 dwts. We now learn that in the deep levels of the central section of the property the development is showing up very well indeed and that a distinct and highly satisfactory improvement in the general outlook for this mine has come about.

Another important fact regarding the Princess which should be appreciated is that the outstanding debentures of the company have this year been paid off. In the first quarter a working loss of £6,406 was announced. In the next three months the corner was turned and a small profit recorded, whilst in the September quarter a working profit of £3,665 was secured, and the October operations resulted in a profit of £1,822.

GEDULD.

A similar improvement is to be observed in the returns of the Geduld Proprietary Mines. The rise in profits may be realised from the appended figures :

	Working Profit for Period.
March quarter ...	£10,834
June quarter ...	12,175
September quarter ...	13,039
October month ...	4,962

Development values are being well maintained and the erection of new plant is being pushed on with. The announcement of much better results in the near future is thus assured.

MODDER DEEP LEVELS.

In the Modderfontein Deep Levels development is proceeding satisfactorily. At the moment of writing there are no new reef disclosures that call for particular mention, but the scheme of development which has already been described in the columns of this journal is being initiated, and we understand the results secured to date amply warrant the expectations of a brilliant future that were formed at the time of the first intersection of the reef.

Apex Mines.

The report for the quarter ended 30th September, 1912, states :—
Gold Section—North Shaft, Main Incline: There was no sinking in this shaft; development : The footage risen, driven and sunk was 1,791, made up as follows :—Driving on Main Reef 1,220, cross-cutting 311, rising 119, sinking 163; boxhole rises (to fully expose reef) 289; total, 1,791 feet. 1,450 feet were sampled on Main Reef, with the following results :—Payable : Feet sampled 605, reef width 80.74 inches, reef value 6.08 dwts.; unpayable : Feet sampled 845, reef width 11.12 inches, reef value 2.18 dwts. The ore reserves on a milling basis as at 30th September, 1912, are estimated to be as follows : Payable : milling 505,652 tons, milling width 56.32 inches, milling value 6.26 dwts.; unpayable : Milling 180,680 tons, milling width 46.51 inches, milling value 2.49 dwts. The net capital expenditure during the quarter on this section of your company's property was £19,627 8s. 6d. **Coal Section**.—The tonnage of coal disposed of was 18,151, the profit being estimated at £7,500. The capital expenditure for the quarter amounted to £160 16s. 2d. **Dividend**.—The profits from the colliery are being utilised towards meeting the cost of keeping the gold mine free of water and the cost of standing charges on the gold section. The usual six-monthly dividend will, therefore, not be paid for the half-year ending 31st December next.

FOUR CORNER HOUSE MINES.

Results Secured in the Past Quarter—Crown Mines Adds Over Three-quarters of a Million Tons to Ore Reserves—City Deep Finances, Profits and Developments.

We are in receipt of the reports of four producing subsidiaries under Corner House control for the quarter ending September last. The salient features are reviewed hereunder.

CROWN MINES.

The leading member of the Central Mining Group—the Crown Mines, Ltd., earned a working profit of £310,661. The insertion of an interim appropriation account enables one to appreciate the financial position of the company at the end of the quarter. It is from this seen that sundry expenditure called for £12,305 and the profit carried to appropriation account was £298,356. In the first nine months of the year the Government profits tax absorbed a sum estimated at £93,785. Dividend No. 22 of 55 per cent., declared on June 18th, absorbed £517,058. French fiscal taxes £8,853, and sundry expenditure, discount and guarantors' commission in connection with the debenture issue claimed £57,390. There was carried forward to the balance sheet the sum of £733,146. It is thus clear that the Crown Mines fully maintains its strong financial position and that the promises made by the controlling house as to the payment of dividends easily will be fulfilled. Indeed, the results noted in the report now before us are further corroboration of Mr. S. Evans' statement at the meeting held a few weeks ago when the resolutions relating to the debenture issue were passed. Mr. Evans, it may be recalled, then remarked that the position of the company was more promising than even the most sanguine had ventured to hope for at the outset. Certainly the results secured this year constitute a fine tribute to the careful administration and admirable foresight which the controlling house have bestowed on this proposition. In the first three quarters of the current year a balance of working expenditure and revenue account amounting to £919,323 has been credited in the appropriation account. To turn to the important subject of development, it is to be observed that 10,022 feet were driven, sunk and risen, exclusive of stopes. It is stated in the report that "the amount of development work has been somewhat decreased; the reef disclosures are satisfactory." But whilst the footage shows a decline, it is interesting to note that the payable tonnage developed amounted to 783,401 tons, whereas in the preceding six months when a substantially greater footage was driven only 366,000 tons were blocked out. It is at first sight rather remarkable that such a comparatively small footage should develop more than twice as much ore as in the preceding six months. The explanation, however, is simple. The tonnage developed for the six months ending June has been added to considerably by development and valuations of further blocks of ore which in the first six months of the year were partially exposed and needed a relatively small footage to completely block them out. In regard to values, it is pleasing to note that the payable tonnage developed in the September quarter had a value of 31s. 5d. as compared with 28s. 6d. in the preceding three months. It is interesting to observe that the value of the ore blocked out in the three months under review was practically identical with the total yield per ton obtained in that period. Development values and widths on the three reefs were:—

	Distance Exposed. Feet.	Width. Inches.	Assay Value.
Main Reef	302	33·0	32s. 2d.
Main Reef Leader ...	3,030	25·0	73s. 7d.
South Reef	1,710	32·0	70s. 9d.

In the September quarter the company had 660 stamps and 24 tube mills at work, and the ore crushed was 6,800 tons more than in the preceding three months. Working costs at 18s. 5d. were 1d. per ton higher, and the yield per ton at 31s. 4d. was 7d. per ton lower. The aggregate profit earned was £310,661, or eleven thousand pounds less than

in the preceding three months. During the period the new centralized hoisting at No. 5 shaft came into operation, together with the large central crusher station. The electric haulage is also in operation on the 13th main haulage level. There have been some unavoidable stoppages, but the new arrangements will shortly be working smoothly. The amount of development work has been somewhat decreased; the reef disclosures are satisfactory. The payable tonnage developed amounted to 783,401 tons of 31s. 5d. value per ton. During the quarter the expenditure of capital account amounted to £15,804 18s. 8d., whilst a further sum of £8,821 1s. 5d. was expended on advance development. An amount of £88,468 remains unspent on account of authorised works. The native labour force at the end of the quarter was 11,602 as compared with 12,909 at the end of June. This number is inadequate for the requirements of the company, but an improvement is expected in the near future.

CITY DEEP.

Next to the Crown Mines and the two Modderfontein propositions, no other mine under Corner House control engages so much attention at the present time as the City Deep. Interest in this property has been quickened by the knowledge that the company will enter the list of dividend payers at the end of the year, and, judging from the credit balance shown in the appropriation account—£215,353—the company should be in a position to distribute a substantial sum amongst shareholders at the end of the twelve months. This balance is not, however, wholly available for distribution. The amount of capital expenditure for the nine months ending September 30th has not yet been appropriated, and the amount to be transferred from appropriation account will not be determined until the end of the financial year, and after it has been decided what dividend has to be declared. In the September quarter 120 stamps (10 more than in the previous three months) were at work and 120,000 tons were crushed for a total working revenue of £219,331, or 36s. 7d. per ton, as compared with £211,073, or 35s. 8d. per ton, in the preceding three months. The profit at £71,219 was practically the same, but working expenses increased by 11d. per ton during the quarter. The development was somewhat less—1,512 feet, as compared with 5,075 feet in the June period. The reef disclosures were:—

	Distance Exposed. Feet.	Width. Inches.	Assay Value.
Main Reef	600	26	15s. 9d.
Main Reef Leader ...	2,690	21	92s. 4d.

In the preceding three months the disclosures were:—

	Distance Exposed. Feet.	Width. Inches.	Assay Value.
Main Reef Leader ...	3,470	20	105s. 3d.
South Reef	35	16	24s. 9d.

The report states: The main Reef Leader development continues to produce satisfactory values. The tonnage milled represents an increase, despite the fact of there being 22,284 tons less taken from the surface dump. The recovery value continues to be maintained at a satisfactory figure, and the one thing required by the mine is more labour to produce more tonnage. New faces are being constantly opened up, and the mining position is showing an improvement from month to month. The mine is greatly in need of native labour.

BANTJES CONSOLIDATED.

At the Bantjes Consolidated the outstanding features of the past quarter's work are: (a) An improvement in profit, and (b) the maintenance of good values on the South Reef and the securing of encouraging results on the Main

Reef Leader in the area between the central and west shafts. There were crushed 70,843 tons for a total recovery of £105,310, or 29s. 9d. per ton, of which £20,982, or 5s. 11d. per ton, was profit. For the quarter 4,245 feet were driven, etc., and the reef disclosures were:—

	Distance Exposed. Feet.	Width. Inches.	Assay Value.
Main Reef Leader ...	605	15	75s. 7d.
South Reef	1,925	9	114s. 3d.

The development footage for the quarter shows an increase of 171 feet. The disclosures on South Reef continue good, whilst promising results have been obtained on leader in the area between the central and west shafts, especially on the 6th level near the west shaft, and the 9th level near the central shaft. Systematic testing of the leader in this area is being continued. The working costs per ton milled, are practically the same as those of the previous quarter, but owing to the improved yield of 10d. per ton, the profits earned are £3,221 higher. The smaller tonnage milled was due to the scarcity of native labour, and the use of small machines was continued, about 20 per cent. of the rock for the mill being again broken by machines. The labour position has now improved somewhat. The turbo-air compressor was completed, and the pumps put into commission during September. The capital expenditure on new construction, etc., for the quarter was £4,521 17s. 5d., whilst an amount of £2,162 is required for the completion of

authorised work. The question of the provision of additional hoisting facilities at the central shaft is receiving consideration.

DURBAN ROODEPOORT.

At the Durban Roodepoort Deep the development footage for the quarter is lower by 374 feet, but was in the neighbourhood of the 1,200 feet per month which it is estimated is about sufficient for the requirements of the mine. The values of the disclosures on both reefs are satisfactory. The working costs and yield both show a reduction of about 5d. per ton milled, but the profits, on account of an increase in the tonnage of 2,180 tons, show an increase of £819. Capital expenditure for the quarter amounted to £4,458 1s. 2d., the bulk of which was spent on the 12th level pumping installation. £16,843 remains to be spent on authorised works. The pump chamber in connection with the 12th level pumping scheme at No. 1 shaft has been completed, and progress is being made with cutting the sumps and the driving of the main haulage drive on the same level. The total working expenditure for the three months was 23s. 11d. per ton and the working profit £23,149. The number of feet driven, risen and sunk was 3,667, and reef disclosures were:

	Distance Exposed. Feet.	Width. Inches.	Assay Value.
Main Reef	1,585	27	46s. 2d.
South Reef	1,490	10	119s. 3d.

RECENT PROGRESS OF THE "T.C.L."

Prospecting Agreements—New Plants at Work—Tin Interests.

From the directors' interim report upon the Transvaal Consolidated Land Company for the quarter ended 30th September, we learn that the surface rights of the farms Couwenberg No. 16, district Pretoria, Kwaggasnek No. 603, district Potchefstroom, and two-thirds Witpan No. 75 and Klippan No. 202, district Lichtenburg, have been sold at satisfactory prices. Provision for the retention of the mineral rights has been made. The farm Moordrift, in the vicinity of the company's farm Rondeboschje, has been purchased at a reasonable figure. Erf 160, Sunnyside, Pretoria, taken over under a bond, has been sold.

Braamfontein Company, Ltd.—This company having recommended the granting of building loans, a fair number of sales of building lots have been effected.

Investments.—Current mortgages have been reduced by £5,336 6s. 9d. New loans amounting to £2,913 1s. 5d. have been granted. The mortgage bonds and other advances account has also been increased by the sum of £12,011 15s. 3d., representing balances due on properties sold, transferred from property account, such balances bearing interest, being secured by the properties themselves, and being reducible by periodic instalments in terms of the deeds of sale. The company's shareholding in the Leeuwpoort (African Farms) Tin Mine, Ltd., has been disposed of at a satisfactory profit.

Agricultural and Pastoral Development.—There has been marked increase in the demand for farms both for lease and sale, and a further considerable area of the company's land has come under European occupation. The company's cattle and ostrich breeding operations continue to make satisfactory progress.

Prospecting.—A prospecting agreement in respect of the farm Sedan No. 1811, district Waterberg, for six months from September 23rd, and a prospecting option over portion of St. Peter's No. 1549, district Waterberg, have been granted. A discovery right for base metals (tin) has been granted on the farm Tygerpoel No. 2300, and Mutua Fides No. 1811, district Waterberg, situated on the joint boundary line of the two farms, the area in respect of such discovery being 700 yards by 700 yards square. Prospecting has recently been started by the company on several promising tin

occurrences on the company's portion of the farm Mutua Fides. Witfontein No. 371, district Waterberg: Crosscutting from the shaft at 150 feet level has exposed the fissure which carried tin values in the upper levels; this is now being developed.

Mining.—Marie Zinc Workings: Development has been proceeding steadily with encouraging results. The designs for the reduction plant are in hand, and as soon as they are passed, tenders will be called for. Butterly-Cecil Group: Development is proceeding on the "Seigneurie Block," and the development rock is being crushed with a light 5-stamp mill. Rietfontein (T.C.L.), Ltd.: At the close of the quarter the plant had run intermittently for 9½ weeks. The plant ran satisfactorily during October. Fairview (T.C.L.), Ltd.: The plant was nearly completed at 30th September. Milling operations started in October. Mount Morgan Mine, Barberton: Development has been stopped pending completion of further experiments on the ore. Zaaiplaats Lease: During the quarter 153 tons of ore, estimated to contain 13 tons of 70 per cent. concentrates, have been stoped, and it is intended to crush all available ore at the Groenfontein mill during November. Development work is still proceeding, and payable ore has been struck in a drive 100 feet on the dip of the main vein.

Groenfontein Tin Mine.—The mine is paying its way, including the cost of all stripping and exploration work. The ore reserves at 30th September amounted to 322 tons, estimated to contain 28 tons of 70 per cent. concentrates. The hydraulic plant has completed the stripping of the overburden in the neighbourhood of No. 9 lense. The work disclosed a fissure carrying patches of tin on its walls, which is being opened up. The plant has now been shifted to a position further north, some distance from any present working. The erection of the slimes plant is nearing completion, and the plant will be ready to start in December. The tributary lease granted to the Zaaiplaats Tin Mining Company, Ltd., has provided 1,690 tons of ore, yielding 66·31 tons of concentrates at the Groenfontein mill as the company's two-thirds free share of the total production. Work is still proceeding on this lease, but the main occurrence has become much poorer.

MINE TAXATION IN THE TRANSVAAL.—II.

The Chamber of Mines and the Ordinance of 1902—Some Interesting Test Cases—Comments in the Supreme Court.

ON the 13th January, 1903, the sub-committee appointed by the Chamber of Mines to report on the working of the Profits Tax Ordinance of 1902 presented its report to the Executive. This report dealt with the various aspects of the Act, under the headings of (1) Initial difficulties in arriving at the capital expenditure and basis of amortisation in the case of companies producing prior to the proclamation. (2) Working difficulties connected with the tax. (3) Retrospective action of the tax. (4) War expenditure. In addition to these matters attention was drawn to the manner in which the calculation was made of the sums permitted to be redeemed; and it is shown that the result of this method was that a company was called upon to pay tax on such portion of the capital sunk in the equipment and development of its mine as was represented by the accumulated compound interest on the sums amortised. For instance, on a capital expenditure of £100,000 the amount redeemed over a 10 years' life would be only £87,230, the balance being completed by accumulated compound interest. That is to say, the sum of £12,764, comprising a part of the total net profit of the company, would be subject to a tax, instead of being deducted from the profit as capital expenditure due to amortisation. It is unnecessary to refer to the various arguments which were drawn up regarding all those points. They were the subject of discussion between the Treasury and the Chamber of Mines, and finally a memorandum of procedure and account as settled between the Colonial Treasurer and the Chamber was published, in which it is interesting to note the following clauses:—

CAPITAL EXPENDITURE FOR AMORTISATION.

- (a) All expenditure on shaft sinking or equipment is admissible for amortisation, irrespective of the question whether such outlay was provided for out of capital, out of reserves, or out of current revenue; or whether or not the assets created by such expenditure have since been depreciated or written down in the company's books.
- (b) The total of such expenditure to the date of taxation to be apportioned as between past and future working, on the ratio of ore (tonnage) worked out to ore remaining in the mine (ore being understood as payable ore).
- (c) All development outlay is to be omitted from the detailed statement of capital expenditure, and the cost value of development existing as at date of taxation is to be added as one item (thus—Advance Development—tons at cost per ton = £—) to the proportion of capital expenditure calculated according to the preceding paragraph.
- (d) The total sum so arrived at represents the amount of capital expenditure for amortisation over the years of future life.
- (e) Future development outlay to be treated as working cost for the purpose of calculating the duty payable each year.
- (f) Shaft sinking to the point where drifting commenced is to be treated as capital expenditure, not as development.

The subsequent discussions between the Treasury and the Chamber during the year 1903 do not appear to have centred at all upon the distinction of capital expenditure and working cost, the chief points in dispute being the amortisation of war expenditure and the method of computing the amounts due to amortisation, as referred to above. In the annual report of the Chamber of Mines for 1901 it is recorded, briefly, that "a question arose between the Chief Inspector of Revenues and some of the companies as to the definition of shaft sinking for the purpose of ascertaining what was or was not capital expenditure for the purposes of the tax, but ultimately an understanding was arrived at between the Treasury and the companies concerned."

CAPITAL EXPENDITURE AND AMORTISATION PROBLEMS.

During the year 1905 we find that the struggle between the Treasury and the mines over the problem of capital expenditure had commenced in earnest. In the early part of the year correspondence arose between the Chamber of Mines and the Government arising out of a claim on the part of the latter to exclude from the yearly allowance for amortisation of capital expenditure the sums paid out by companies for interest on loans and debentures prior to the commencement of milling operations and treated as a charge to capital account. The Chamber held that the fund out of which interest in loans and debentures had to be met prior to the date of milling operations is properly capital account. The Treasury contended that had this been the intention in framing the law a provision to that effect would have been inserted in the proclamation. Another point of difference arose between the Chamber and the Treasury in regard to a claim for payment of the profits tax on the sundry revenue earned by gold mining companies. An instance was brought forward in the case of the Knights Deep, Ltd., where the revenue derived from the sale of surplus water was held liable to profits tax, and it was pointed out to the Government that the water had to be pumped before the mine could be worked, the company debiting to working costs only the actual cost of pumping the water out of the mine. No satisfactory settlement could be come to, and eventually the Knights Deep, Ltd., contested both the points at issue before the Supreme Court. In the first case judgment was given against the company, the Court holding that interest on debentures for the purpose of equipment and development of a mine was not money "actually expended in mine equipment, shaft sinking and development" under Section 1 of the proclamation, and could not therefore be deducted by way of allowance for exhaustion of capital under Section 2. In the second case judgment was given in favour of the plaintiff company, the Court holding that "in calculating the cost of production," as defined by Section 3 of the proclamation, the amount actually expended in the pumping operations must be considered, and that therefore the amount realised by the sale of such water need not be deducted. As the company maintained, "the fortunate circumstances of our being able to dispose of portion of our surplus water, instead of allowing it to run to waste does not reduce the cost of winning the gold," but merely increases our "sundry revenue" from other sources than "value of gold produced." The point in this case, of course, is that "sundry revenue" was not subject to taxation, the taxable "net produce" being "the value of the gold produced after deduction therefrom of the cost of production." By deducting the revenue obtained from the sale of the water the "cost of production" would have been minimised and the taxable profit just so much greater. The view of the Treasury on the point, as expounded by Mr. W. L. Hichens, the Colonial Treasurer, is worth quoting. "The facts appear to be," he wrote, "that, in the course of mining operations, an expenditure of £15,803 was incurred in keeping the mine clear of water and pumping that water to the surface; on the other side of the account a sum of £21,210 was realised from the sale of the water which had to be pumped as part of the mining operations, and the question to be decided upon these facts is: What is the true working cost chargeable against produce in respect of pumping operations?" In calculating the true production cost of any commodity, it is common, and I think you will agree the sound practice, to credit the value or price derived from bye-products or incidental products which result in the process of production as a set-off against gross cost of production, and certainly in any partnership account for division of the produce, the bye-products would have to be reckoned against

production cost. As between the company and the Government it is really a question of partnership account and division of produce, there seems no reason why the sound practice just referred to should be departed from. In your letter you speak of these sales of water as a separate source of revenue, but I cannot see that there is any better reason for classifying this item as a separate source of revenue than there is for classifying rebates on shipping freights or trade discounts as separate revenue."

COMMERCIAL PRINCIPLES.

With regard to the matter of the debenture interest it was pointed out by the Colonial Treasurer that capital expenditure was defined by Section 4 as:—(2) Amounts actually expended for ordinary purposes of administration prior to the commencement of production, and that if interest were an administrative expense of the pre-producing stage then it was no less an administrative expense of the producing stage; but the law, in plain terms, excluded it from ranking as an administrative charge of the period of production. This last statement presumably refers to the non-inclusion of interest in the list of general charges given in the schedule accompanying the proclamation. Clause (1) which includes as capital expenditure "amounts actually expended on equipment and development" was apparently not considered by Mr. Hitchens to apply to the matter. Mr. Justice Mason, as happened in the recent case of the Nums-Mines, found it unnecessary to decide the case on the ordinary business principles applicable to commercial concerns, "because the law provides special definitions of 'cost of production' and 'capital,' and these are not inclusive, but exclusive definitions." Section No. 2 in the definition just given did not apply, and only Section No. 1 was left. According to this interest was clearly not indicated in the words used, and to explain his view of the section he added an illustration. "If you erect a house," he observed, "which costs you £900, you get it for that £900, which is the amount actually expended in building the house. It may be that you have got to pay a higher sum of money—depending entirely upon your credit—in order to raise that amount, and it will cost you a very much larger amount

than £900, but it does not appear to me that you can say that more than that sum of £900 has been actually expended upon the building of the house, and I think that argument applies to the present case." In the matter of the pumping and sale of water previously referred to, it was also explained that "the ordinary commercial meaning of 'cost of production' is excluded by the special definition." Mr. Justice Culewiss, who was on the bench in this case, together with Mr. Justice Bristow, delightfully remarked: "If I had to decide the issue in this case on the ordinary business meaning of the words 'capital' and 'cost of production,' I think I should be compelled to decide in favour of the plaintiff company on its contention as to the meaning of the word 'capital,' and in favour of the Government on the Government's contention as to the meaning of the words 'cost of production,' but I am precluded from deciding this case in the ordinary common meaning attached to those words, because the proclamation has given a special meaning to the word 'capital,' and a special meaning to the words 'cost of production.' Giving those words the special meaning attached to them by Proclamation 34, I come to the opposite conclusion." It will scarcely be denied that gold mining is in every respect a commercial enterprise. Sufficient has been quoted from various sources to make it evident that the Profits Tax (Gold Mines) Act of 1902 was, with its definitions which did not allow of a commercial and commonsense interpretation of facts, and its obviously inadequate methods of expression, an inevitable source of hair-splitting and legal quibbling. As an instrument for the maintenance of the legal profession, its merits are apparent to the most casual eye; as a measure for carrying out the intentions of the Government smoothly and effectively, it was a failure. It is to be observed, however, that the defects which have been so strikingly revealed in its structure since the date of its proclamation do not appear to have suggested themselves even to the Committee of the Chamber of Mines, and in view of the urgent need for taxation immediately after the war the somewhat hurried process of drawing up the ordinance may be condoned. There is not so much to be said in favour of the more recent Act which perpetuates the weak points of its predecessor and adds others of its own.

Komati Mines.

Amongst the increases in the capital of South African Companies is that of the Komati Mines, Ltd., Johannesburg, increased from £12,000 to £16,000.

Worcester G.M.

The Worcester Gold Mining Co. report upon their mining for October as follows:—Tonnage crushed, 5,300 tons; gold from mid, 758,927 ozs.; yield from cyanide, 421,316 ozs.; total yield, 1,180,273 ozs.; valued at £1,986 13s. 1d. Approximate profit, £1,210.

International Electrical Congress.

The Executive Committee of the International Electrical Congress, held in San Francisco in September, 1912, in conjunction with the Panama-Pacific International Exposition and under the auspices of the American Institute of Electrical Engineers, has an International Committee on Electricity. They are to consist of the following: (1) Electrical distribution, including the lighting of cities, the distribution of electric power, the generating, transmission and distribution of power; (2) the electrical apparatus, such as, electric traction, electric power, electric heating, electric and gas generation, insulation, protection, protection, including the protection of electrical apparatus, the development of economic and industrial electrical power, the electrical problems relating to the generation of electric power, the use of electric power in service and in the arts, the generation of electric power and its applications; (3) telegraph and telephone, including all communication and signalling by electrical means; (4) electrical plants, including all communication by electrical means; (5) the use of electric power in the arts, including the use of electrical power in agriculture, mining, manufacture, and commerce; (6) protective devices and the electrical protection of buildings, ships, and other structures; (7) electrical engineering, including the use of electrical power in the arts, including the use of electrical power in agriculture, mining, manufacture, and commerce; (8) electrical engineering, including the use of electrical power in the arts, including the use of electrical power in agriculture, mining, manufacture, and commerce; (9) electrical engineering, including the use of electrical power in the arts, including the use of electrical power in agriculture, mining, manufacture, and commerce; (10) electrical engineering, including the use of electrical power in the arts, including the use of electrical power in agriculture, mining, manufacture, and commerce; (11) protective devices and the electrical protection of buildings, ships, and other structures; (12) electrical plant.

Tweefontein Colliery.

The directors of the Tweefontein Colliery, Ltd., have resolved to declare an interim dividend for the half-year ended 30th June, 1912, at the rate of 12½ per cent. per annum, less income-tax.

Voorspoed Diamonds.

At the last meeting of the Kroonstad Town Council, the Mayor (Mr. James Strang) read correspondence which had passed between himself and the Minister of Mines, with regard to the closing of the Voorspoed Diamond Mine. On the 20th of October the Mayor wrote to Mr. Malan as follows:—"I would respectfully draw your attention to the fact that, with the exception of your acknowledgment of receipt, dated 27th August, my Council has not heard from you with regard to the resolution forwarded to you by the Government to appoint a Commission of Inquiry into the circumstances in connection with the closing of the Voorspoed Diamond Mine. As the matter is one in regard to which great natural anxiety is felt in the town and district, and as constant inquiries are being made, I shall esteem it a favour if you will be good enough to inform me at the earliest possible moment what is the result of the consideration which you stated, in your acknowledgment of 27th August, the matter was receiving." Mr. Malan replied, through his private secretary, as follows, under date 31st October:—"I am directed by the Minister of Mines to acknowledge the receipt of your letter dated the 29th inst., relative to the appointment of a Commission of Inquiry into the circumstances in connection with the closing of the Voorspoed Diamond Mine. In reply, I have to inform you that the matter is still under consideration, and that you will be advised in due course when a decision has been come to." Commenting upon Mr. Malan's reply, the Mayor characterised it as highly unsatisfactory after the lapse of two months, in regard to a matter which the town and district considered to be of urgent importance. On the motion of Councillor J. G. Vorster, seconded by Councillor A. J. King, it was unanimously resolved that a public meeting should be called by the Mayor. The Mayor is accordingly calling a public meeting in the Town Hall for next Saturday evening, at which it is expected that the district as well as the town will be strongly represented.

THE YEAR WITH THE S.A.R.

Points from the General Manager's Report—Claims of the Ports—Traffic Returns—South African Products—Volume of General Trade Maintained.

This week there was issued a Blue Book of 150 pages containing the report of the General Manager (Mr. W. W. Hoy), and other statements relating to the working of the railways and harbours of the Union during 1911. Mr. Hoy says:—The outstanding feature of the railway returns for the period covered by this report has been the continued increase in passenger traffic, reflecting clearly the enhanced prosperity of the country as the result of the exceptional expansion in trade which took place in 1910. It was hardly to be expected that this expansion would continue at the same rate during 1911, and this has proved to be the case, for while in 1910 the total revenue-earning tonnage increased by nearly 20 per cent, over the preceding year, the increase for the year under review is not quite $3\frac{1}{2}$ per cent. This indicates that, while the volume of trade has been well maintained, the country is passing through a comparatively quiescent period after the exceptional activity which characterised the year of Union, thus justifying the opinion expressed last year that "before any further general advance took place there was likely to be a lull."

South African Products.—A satisfactory feature of the position is the continued improvement in the tonnage of South African products, the majority of which show large increases over the quantities conveyed in 1910, and this feature is also reflected in the export trade returns for the first six months of the current year, which show a satisfactory advance over the corresponding period of 1911. There is nothing, however, to indicate an immediate recurrence to the rapid expansion in trade experienced in 1910, but I look forward to a prolonged period of steady progress.

Passenger Traffic.—The year under review has been remarkable for a further increase in passenger traffic, though the expansion has not been so great as that which characterised the year 1910. The passenger earnings show an increase of £265,732, or 9·45 per cent., which corresponds fairly closely with the increase in the volume of the traffic of 10·28 per cent. The most striking features are the increase in the number of ordinary passenger journeys and the decrease in the number of excursion bookings. In the former case the increase is due largely to the general expansion of traffic resulting from the continued prosperity of all sections of the community and stimulated by the reduction in fares, and also, to a smaller extent, to the transfer of short-distance holiday traffic from excursion to ordinary bookings, consequent on the abolition of special excursion fares for this class of traffic and the substitution of greatly-reduced ordinary fares. The decrease in the excursion traffic is, therefore, more apparent than real, and is in effect merely a transfer—and a healthy one—from one to another.

The increase in the first and second class season tickets corresponds more or less closely to the rate of increase in the passenger traffic generally in those two classes; the third-class season ticket traffic has remained practically stationary. The expansion in passenger traffic has been fairly general all over the Union, but was particularly marked in the Western and Northern Divisions of the Cape Province, where the increase in the total number of passengers conveyed was approximately 22 per cent., the total bookings from Capetown alone being 35 per cent. in excess of 1910. The bookings to Durban from the Transvaal and Free State were again very heavy. The figures for 1911 for the months of June, July, and August were 9,507 in 1911, 7,855 in 1910, and 5,281 in 1908.

Transvaal Traffic.—The falling off in the traffic from the ports to the Transvaal is reflected in the tonnage of commercial sea-borne traffic to the Transvaal competitive zone, the following being the figures in summarised form:—

	Tons.	Tons.
	1911.	1910.
Cape ports	66,186	62,231
Durban	152,822	146,976
Lourenco Marques ...	326,468	407,338
Total	545,476	616,685

It will be observed that, while the tonnage through the Cape ports and Durban has increased slightly, that through Delagoa Bay has dropped nearly 20 per cent. This is largely due to the fact that a great proportion of the heavy traffic for the mining industry, such as machinery, timber, galvanised iron, cement, etc., the decrease in which has already been noted, is imported by that route. The alteration in the rates from the Union ports, to which attention is directed elsewhere, has also had some effect in reducing the tonnage of traffic imported via Delagoa Bay.

South African Products.—The General Manager, in dealing with rates, says: In regard to the preferential rates for South African products and manufactures, I can only reiterate the opinion I expressed in my last report, that the principle of affording protection to South African industries by this means should be abandoned, and that such protection as may be considered necessary or desirable should be given by means of a protective import tariff. This view is supported by the findings of the Industries Commission, which reported towards the close of last year, and it is hoped that effect will be given as soon as convenient to the recommendations made in this particular connection, so that the railways may be relieved of an economic burden which is properly a fiscal responsibility and one that can in no sense be regarded as forming part of the functions of the Department concerned with the transportation service of the country. It is the intention, as far as possible, to establish uniform rates for coal throughout the Union, and so to arrange the tariff that the rates for longer distances will be low enough to admit of coal becoming a household commodity in districts where at present the high cost of railage precludes its use.

Claims of the Ports.—Reduction in goods rates, passenger fares, parcel rates and port rates to the competitive areas are dealt with exhaustively, and in regard to the latter the General Manager states that the whole question is extremely complex, and it is doubtful whether the problem has been finally disposed of by the arbitrary percentages allocated to each port by the agreement of February, 1909. His impression is that at some future time it may possibly be found desirable to depart from the principle of fixed percentages and to adjust the rates so that each of the competing ports will secure the description of traffic for which it is specially adapted. For example, Port Elizabeth handles the bulk of what is known as mail boat cargo, consisting principally of fancy and soft goods; East London offers advantages as a port of entry for flour and American cargoes; Durban is a convenient port for heavy machinery and general goods; while Lourenco Marques is favoured by importers for rough goods, such as cement, rough timber, iron and goods in respect of which expeditious delivery is not a material consideration, and on which a small difference in railage affects competition. The General Manager does not think it would be wise to sacrifice the interests of existing ports—which have rendered great service in the development of South Africa—by a rigid adhesion to purely mileage or geographical considerations. Mileage must always be taken into consideration, but experience shows that the Cape ports and Durban have always enjoyed a large tonnage of competitive traffic even when handicapped by heavy disadvantages in rates. This indicates that these ports offer substantial advantages to importers, and he feels that when the facts show that certain classes of traffic have a tendency to gravitate to a particular port—despite disadvantages in rates—that port must be regarded as possessing special advantages for such traffic. It may be urged that traffic should be conveyed by the route which can be worked at the lowest cost; but the shortest route is not always the cheapest. Density of traffic has a pronounced effect on working costs; certain routes may show favourable results because they are fortunate in having a dense traffic—other routes might show equally or even more favourable results if given a larger share of traffic.

AFRICAN FARMS' TIN INTERESTS.

Leeuwpoort and Welgevonden—Ore Reserves at Grass and Developed—Mills to Start in July and April.

The characteristics of the tin occurrences in the Rooiberg area were well illustrated by Mr. Julius Jeppe, who presided at the last annual meeting of the African Farms, Ltd., when he stated that while the erratic nature of tin deposits usually made it difficult to make forecasts as to their yield it was a condition which applied more especially to those mines which were dependant upon only one or two separate lodes. With conditions such as those at Leeuwpoort, however, where there were at least six separate mines, and where the development results from poor sections were not infrequently balanced by favourable prospects from others, the disadvantages of erratic values were largely discounted. "We have found," he observed, "ever since working was actively commenced on the Leeuwpoort Mines, that where some tin lodes get poorer in value, or even lose it entirely for a certain distance, others show the opposite result, so that at the end of each month it has been proved that the average value of the six mines being worked has been more or less constant." These features are no doubt common to large portions of the Rooiberg field, in which the quartzites have been fissured in various directions, each group of fissures being more or less mineralised without regard, apparently, to their particular bearing. The convenience of such a state of things, as affording a means of averaging to some extent the value of ore sent to the mill is obviously not all that is to be said in its favour. A number of lodes facilitates development and ensures a safe ore reserve position. Although operations have not been in progress for many months the manager reports that a conservative estimate of the total ore at grass and developed at the end of October is 86,849 short tons, averaging about 2½ per cent. tin. Basing his calculation on an extraction of 80 per cent. and with tin at £220 per ton, he shows a value of £344,000. It is expected that when the mill and dressing plant, with a capacity of 150 tons per day, is put into commission, that is to say, some time in July next, there will be over two years' ore opened up in advance of the plant. The fact that there are numerous points of attack, superficially, makes it unnecessary to provide for deep mining, and in view of the uncertainty which prevails with regard to the depth of the granite contact from the surface in the Rooiberg area this is rather an important circumstance. There is no

reason at all to assume that the tin ore will disappear when the granite is reached; quite the contrary, for the granite is undoubtedly the source of the tin occurrences in the overlying quartzites. It is only to be expected, however, that the lode conditions will be distinctly different and that a new mining policy will be required to meet them. There is no evidence of the close proximity of the granite at any of the Rooiberg mining centres, as far as we are aware, but in any event the comparative abundance of ore within a moderate depth from the surface appears sufficient to minimise very considerably any reason that may exist for anxiety on this score. Mr. Jameson, the manager at Leeuwpoort, reports gratifying results generally in the way of development. In addition to the lode occurrences there is stated to be a large quantity of tin-bearing alluvial ground which has not been explored to a great extent so far on account of the necessity of concentrating all the available labour on the mine and plant. The important question of water is answered by the statement of the chairman that "it is expected that the mine and boreholes will yield sufficient water for all our requirements."

WELGEVONDEN.

At Welgevonden, adjacent to Doornhoek, where the South African Tins are producing concentrates, a 10-stamp battery is now in course of erection, and it is hoped will be ready to commence crushing about April next. The occurrences on this property, which lies at the felsite shale horizon, are greatly different, from the geological point of view, to those which have been opened up in different parts of the Rooiberg area. The necessity of ample development is here much more evident than in the case of Leeuwpoort, and in these two properties, Welgevonden and Leeuwpoort, we have instances which will serve to illustrate Mr. Jeppe's remarks with regard to the erratic nature of tin ore deposits and its bearing upon mining operations. Some 18,000 or 19,000 short tons of ore are now at grass and developed, according to the chairman, and will be considerably augmented before crushing commences. The existence of tin lodes of a similar character on Doornhoek and the better knowledge which now prevails with respect to their characteristics, together with the generally gratifying nature of the development results in Welgevonden justify one in looking upon the venture as one of good promise.

Wireless Telephony Underground.

Recently a new method of telephone communication, invented by Mr. Reineke, C.E., of Bochum (Rhineland-Westphalia), has been introduced at the Carolinenglück mine, near Bochum, and appears to have given complete satisfaction. It is in most respects very similar to the aerial wireless systems, but it is especially adapted to underground mine work, as it utilises the lower strata of the earth's crust to insulate the weak conductors existing in the mine—i.e., the hauling ropes, the pipe lines, and the rails. Owing to this advantage, Mr. Reineke's system can be worked with very low primary currents of 12 v. tension and .5 amperes. By the oscillations of the sound membrane of the telephone, alternate currents of very high frequency are produced, whose voltage is, by means of an induction apparatus, brought to several thousand volts. The high-tension low currents pulsate in the connected imperfect conductors in the mine, and communicate their electric oscillations to the surrounding ether. The whole plant consists, at the transmission and receiving stations, of a few low current elements, a small induction apparatus—which also serves for the functions of the buzzer—and the call-signal apparatus. It can be packed in a small portable case, and weighs no more than 11 kgs. With this simple plant conversations are at the Carolinenglück mine kept up in the usual course of the underground work over distances of nearly two kilometres. Owing to the very low current-power required, this wireless telephone system is not liable to any dangerous consequences. No sparks are generated, and practice has proved that not even the electric blasting fuses respond to it. Very little power is required for working the plant, which reduces the expenses connected with the system to a minimum.

Simmer Deep.

Development Work.—Number of feet driven, risen and sunk, 4,041 ft.; estimated number of tons developed, 124,464*; ore crushed, 157,770 tons; gold recovered, 32,674.793 ozs.; revenue from gold, £137,174; working expenditure, £125,378; cost per ton milled, 1s. 10.808d.; profit on working, £11,797; profit per ton milled, 1s. 5.954d.; sundry revenue, £1,675; total profit, £13,471; appropriation for renewals fund, £363; debenture interest and charges, £12,812; estimated net profit, £297. A sum of £12,061 was spent on plant, shaft sinking and development, against which a sum of £13,828 was charged to working costs for redemption of development, which left a credit of £1,767.

High Mining Salaries

EARNED by those holding Mining Certificates as Mine Managers, Foremen, Surveyors, Mechanical and Electrical Engineers and Engine Drivers. Private Individual Tuition and Correspondence Lessons where personal tuition is impossible.—E. J. MOYNIHAN, Consulting Engineer, 35 and 36 Cuthbert's Buildings; Box 2061.

TRANSVAAL CHAMBER OF MINES' MONTHLY REPORT.

Native Labour—Small Holdings Commission—Water Supply.

The report of the Executive Committee states, *inter alia*—The returns supplied by the Witwatersrand Native Labour Association on last day of month (including natives in the service of mine contractors, but excluding natives in the employ of members of the Association in the districts of Barberton, Breyten, Rooiberg and Louis Moore) are:

Source.	September.	October.
On gold mines	180,739	182,058
On coal mines	8,783	8,803
On diamond mines	15,752	15,496
Totals	205,274	206,357

Recruiting Results.—The W.N.L.A. also furnishes the following information with regard to the natives recruited by the Association and its members during the month of October, 1912, and the districts whence they were obtained. These figures do not include natives recruited by mine contractors. The corresponding figures for the month of September are given for the purpose of comparison:

Source.	September.	October.
East Coast—South of Lat. 22° S.	4,422	4,955
East Coast—North of Lat. 22° S.	1,765	2,112
British Nyasaland Protectorate (including dependents)	49	17
Cape Province	4,397	4,542
Transvaal Province	451	462
Basutoland and O.F.S. Province	1,500	1,411
Bechuanaland	108	130
Natal Province	537	598
Swaziland	303	360
Rhodesia (including via Pietersburg)	41	29
Local	7,078	7,535
Totals	20,651	22,151

Natives Employed in Labour Districts of Transvaal.—The monthly report issued by the Department of Native Affairs shows that at the 30th September, 1912, 309,905 natives were employed in labour districts of the Transvaal. Of this number, 216,341 were engaged on mines and on the various classes of works specified in Part I. of the Coloured Labourers' Health Regulations, 1906, and 91,687 were in other employ.

Advances to Natives.—In the *Union Gazette* of November 5th a notification was published under Notice No. 1,523 that His Excellency the Officer Administering the Government had approved of the withdrawal of Regulation No. 24 under the Native Labour Regulation Act and the substitution of the following regulation therefor, viz.: "It shall not be lawful for any person recruiting native labourers under the Act to make any advances to any native in excess of the sum or value of two pounds, exclusive of any charges for railway transport; provided that in times of famine attesting officers in any district or area approved of by the Minister may, in order to alleviate cases of distress, authorise the making of advances not exceeding the sum of five pounds exclusive of such charges. No interest shall be chargeable on such advance."

Small Holdings Commission.—As indicated in the report of the Executive Committee for August last, the references to the above-named Commission were fully considered by a sub-committee. Various points of information had been requested by the Commission from the different mining companies, and the Chamber, with the consent of the Commission, collected and tabulated the information for the benefit of the Commission. The Executive Committee decided not to give evidence, and, when forwarding the particulars in tabulated form, informed the Commission of that decision. The statements rendered by the Chamber were three in number, showing (a) the number of European

employees, married and single, and the conditions of service in respect of each mine; (b) the accommodation provided by each company for its employees and the rentals charged; (c) a description of the title under which the various mining companies conduct mining operations upon the land affected.

Water Supply.—Owing to the acute position created by the drought, the Executive Committee have given the question of future water supply for the mines their most serious consideration, and it is hoped that a scheme will be evolved which will relieve the situation. In view of the shortage of water supplied by the Rand Water Board, the Executive Committee felt it necessary to issue a circular to the mining companies urging upon them the necessity of reducing their daily demands to the lowest possible quantity until further notice. In connection with the future requirements of water for the mining industry, a communication was received by the Chamber from the Minister of Mines, enquiring whether any provision was contemplated to meet any future shortage of water. To this the Chamber replied, pointing out that it would relieve the situation to a great extent if the water available in the shafts of the Grootvlei Proprietary Mines and the Western Rand Estates Mine could be drawn upon. A letter was subsequently received from the Minister, stating that he could not see his way to grant this request.

Precious and Base Metals Act—Bewaarplaatsen.—With reference to the recommendation of the Select Committee on Public Accounts that the question of the disposal of the proceeds of the rights to mine under bewaarplaatsen, machine stands, etc., be submitted to Parliament for its decision, the Chamber forwarded a communication to the Government recommending for its consideration when bringing the subject before Parliament, that the findings of the Bewaarplaatsen Commission of 1909 should be carried into effect.

Tuberculosis Commission.—The Executive Committee was invited to give evidence before this Commission. Having regard to the fact that the inquiry is of a highly technical nature, that the Commission had already heard the evidence of Dr. G. D. Maynard, the assistant medical officer of the Witwatersrand Native Labour Association, which is affiliated with the Chamber, and that the Commission was also taking evidence of numerous mine doctors and other mine officials, the Executive Committee did not see what additional evidence it could supply; but offered the Commission to procure for it any further data from the mines that it might desire.

Miners' Phthisis Prevention Committee.—On the establishing of the above-named Committee, the Chamber and the Government each contributed a sum of £250 for the purpose of the investigation under the terms of reference. These moneys having been expended, further like amounts have been voted by the Government as well as the Chamber.

Freight on Bullion.—Negotiations are carried on by a London Committee of the Chamber with representatives of the Shipping Companies with the object of endeavouring to obtain a reduction in the present rates of freight on the raw gold shipped to Europe.

Membership.—The following withdrawals from membership as from December 31st, 1912, have been notified:—Champ d'Or French G.M. Co., Ltd.: Representative, Mr. A. Stone. South Randfontein Deep, Ltd.: Representative, Mr. W. McC. Cameron. Afrikander Proprietary Gold Mines: Representative, Dr. J. Schlesinger. Benoni Consolidated Gold Mines: Representative, Mr. E. H. Read. New Boksburg Gold Mines: Representative, Mr. E. J. Way. Representation.—The following change in representation has taken place: French Rand G.M. Co., Ltd., Mr. P. Cazalet, vice Mr. Guy Brunton.

Gold Output.—The output of gold for the Transvaal for the month of October has been declared at 768,681 fine ounces, valued at £3,265,150, being an increase of £88,304 as compared with the previous month.

QUARTERLY REPORTS.

Albu Group.

The reports on operations for the quarter ended the 30th of September on the mines of the General Mining and Finance Corporation Group are as follows:—

VAN RYN.

Number of feet driven, risen and sunk, 3,394; ore crushed, 119,110 tons; total gold recovered, 38,021.554 ozs.; revenue from gold, including sundry revenue, £161,550 (sundry revenue, £484); total working expenditure, £90,124 cost per ton milled, 15s. 1.596d.; working profit for quarter, £71,426; working profit per ton per quarter, 1s. 11.919d.; expenditure on capital account, £8,609. The profit is £81 in excess of that for the previous quarter. To comply with the requirements of the New Mines and Works Regulations, the existing change houses are being extended and re-equipped. The installation of No. 2 shaft electric hoist and erection of new steel headgear were completed, and the change over took place during August. The change over necessitated two weeks' stoppage of operations in No. 2 shaft, but milling proceeded as usual owing to the previous accumulation of 8,550 tons of ore on the surface.

MEYER AND CHARLTON.

Number of feet driven, risen and sunk, 1,604; ore crushed, 42,517 tons; total gold recovered, 21,952.571 ozs.; revenue from gold, including sundry revenue, £62,210 (sundry revenue, £218); total working expenditure, £30,280; cost per ton milled, 18s. 5.77d.; working profit for quarter, £53,022; working profit per ton per quarter, 25s. 4.549d.; expenditure on capital account, £1,797. A percentage of 11.66 of the net produce from mining operations is payable to the Government in respect of certain undermining rights leased to the company. The working profit shows an increase of £2,570 over that for the previous quarter. The average milling value of the ore reserves has now increased to 11dwt. per ton.

WEST RAND CONSOLIDATED.

Number of feet driven, risen, and sunk, 4,227; ore crushed, 80,250 tons; total gold recovered, 27,616.932 ozs.; revenue from gold, including sundry revenue, £117,258 (sundry revenue, £417); total working expenditure, £94,188; cost per ton milled, 23s. 5.683d.; working profit for quarter, £23,100; working profit per ton per quarter, 3s. 9.065d.; expenditure on capital account, £8,275. The amount charged to working costs on account of "mine development redemption" is £309 in excess of the actual expenditure on mine development. The working profit shows an increase of £5,503 over that for the previous quarter. Development on the Battery Reef series (Rand shaft) continues to disclose very gratifying results as regards both width and values of the reef. Development of the main reef series is also progressing satisfactorily. In view of the improved developments generally on this property, plans and specifications are now being prepared for an extension of mining and milling operations to a total crushing capacity of 10,000 tons per month, which will constitute the second stage of the programme of expansion.

NEW GOCHI.

Number of feet driven, risen and sunk, 1,206; ore crushed, 83,635 tons; total gold recovered, 19,104.869 ozs.; revenue from gold, including sundry revenue, £80,070 (sundry revenue, £139); total working expenditure, £95,869; cost per ton milled, 16s. 1.276d.; working profit for quarter, £14,110; working profit per ton per quarter, 3s. 3.782d.; expenditure on capital account, £27. The working profit shows a decrease of £198, as compared with the previous quarter. Development operations in the lower levels continue to open up one of a higher value than the average value of the ore reserves.

AUERVA WEST.

Number of feet driven, risen and sunk, 3,586.51; ore crushed, 43,975 tons; total gold recovered, 12,811.965 ozs.; revenue from gold, including sundry revenue, £24,473 (sundry revenue, £181); total working expenditure, £12,201; cost per ton milled, 19s. 2.336d.; working profit for quarter, £12,260; working profit per ton per quarter, 5s. 6.96d.; expenditure on capital account, £2,167. The working profit shows an increase of £3,518 over that for the previous quarter.

ROODEPOORT UNITED.

Number of feet driven, risen and sunk, 4,159; ore crushed, 96,438 tons; total gold recovered, 21,509.241 ozs.; revenue from gold, including sundry revenue, £101,479 (sundry revenue, £181); total working expenditure, £1,1397; cost per ton milled, 17s. 11.506d.; working profit for quarter, £10,657; working profit per ton per quarter, 2s. 2.628d.; expenditure on capital account, £7,854. The amount charged to working costs on account of "mine development redemption" is £37 in excess of the actual expenditure on mine development. The working profit shows a decrease of £3,673, as compared with the previous quarter, which is mainly due to the lower tonnage milled. The drives east beyond the dyke on the eastern side of the

Kimberley-Roodepoort shaft) on south reef indicate a large stretch of settled country in this section of the mine, and the values disclosed are very satisfactory, but it will take some time for the development of this ground to be sufficiently effected to enable stoping operations to be carried on and an appreciable increase in the present level of profits attained.

CINDERELLA.

Number of feet driven, risen and sunk, 4,470; ore crushed, 53,140 tons; total gold recovered, 16,052.882 ozs.; revenue from gold, including sundry revenue, £68,409 (sundry revenue, £551); total working expenditure, £63,699; cost per ton milled, 21s. 8.72d.; working profit for quarter, £2,270; working profit per ton per quarter, 1s. 6.512d.; expenditure on capital account, £27,107. The working profit for the quarter was seriously affected by the large number of air blasts which occurred during the second week in July. As a result of these air blasts, four better grade stopes were closed to attack for the greater part of July, and two more better grade stopes till the middle of August, in addition to which heavy expenditure was incurred in clearing out the vast quantity of waste rock brought down by the air blasts, and in making the stopes safe for working to be resumed. The development scheme for opening up the ground in the Eastern Section has been vigorously prosecuted during the quarter, good progress having been made in the drive towards the central shaft, while highly satisfactory values have been disclosed. In the central shaft 28ft. were sunk, making a total depth of 2,307 ft. The improved footage is due to the hard dyke having now entirely passed out of the shaft. An electric pump has been installed to take the place of the air pumps in pumping costs having been effected thereby. The erection of the No. 2 electric winder is nearing completion, and it is anticipated that it will shortly be ready for use.

RAND COLLIERIES.

Underground Work.—The sinking of the No. 1 east incline was continued during July a further 106½ ft., to a total depth on incline of 1,140 ft., and was then suspended, work being started on the 10th level. The crosscuts to the reef on this level at the end of the quarter had been driven 237 ft. in the crescent east, and 129 ft. in the crosscut south, the latter being put in to strike the reef to the south of the dyke which was encountered in the incline. A boxhole (36ft.) and some other necessary cross-cutting (5ft.) have also been completed. The footage for the quarter is, therefore, 407 ft.

Main Reef West.

Tons milled, 59,694; gold recovered, 22,268.545 ozs.; revenue from gold, £93,276; total working expenditure, £62,160; cost per ton milled, 21s. 0.45d.; profit for quarter, £31,116; profit per ton milled, 10s. 6.371d.; capital expenditure, £13,159. On development work, 3,321 ft. were driven, risen and sunk, including prospecting work. Excluding main cross cuts, ore passes and prospecting work, 2,165 ft., or 68.1 per cent., has been on leader and main reef combined, and of this 1,907½ ft. have been sampled. Of this 865 ft., or 45.5 per cent., has been payable, of an average value of 7.5 dwts. over 48 ins. And 1,042 ft., or 54.5 per cent., has been unpayable, of an average value of 3.7 dwts. over 48 ins. The ore reserves as at 30th June were 655,720 tons; ore developed for quarter, 46,250 tons—total, 731,970 tons; less ore mined for quarter, 67,878 tons; less difference in stopping width, etc., 8,958 tons—total, 58,920 tons; which made the ore reserves as at 30th September 673,050 tons. On shaft sinking, 462 ft. have been sunk and timbered in the No. 5 shaft, making a total to date of 3,492 ft.

MINING MEN AND MATTERS.

Mr. E. J. Way returned to the Rand this week.

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Mr. Eugene Schmidt, of Messrs. H. H. Boeker & Co., Engineers, of Remscheid, is paying a visit to the Rand, and is staying at the Langham Hotel.

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Mr. Walter McDermott has been elected Chairman of the Consolidated Mines Selection Company; Mr. E. T. Patterson has been appointed a director, and Mr. W. L. Hornold has been appointed a director and also managing director for South Africa in the place of the late Mr. J. G. Hamilton.

WHAT THE SOUTH AFRICAN RAILWAYS BUY.

Points from the Report on the Working of the Stores Department for 1911 —Turnover of £8,034,200—Encouraging Local Industries.

MR. CHAS. COCK, Chief Railway Storekeeper, reports, *inter alia*, as follows on the working of the Stores Department for the year 1911:—The turnover of £8,034,200 is much lower than the previous year, but this does not mean any decrease in the business of the Stores Department, and the requisitions, etc., received for stores show an increase of 20 per cent., principally due to the fact that since Union the various departments are not allowed to carry any stocks of material in the workshops and now draw supplies as required, instead of in bulk. Stores Account, 1911: Stores on hand as at 26th December, 1910, £1,217,389; English purchases, £1,447,501; Colonial purchases, £1,810,550; returned stores, etc., £857,784; stock adjustment account, £21,270; railage on sales, etc., £25,639; transfers as per contra, £651,451; total, £6,031,607. By issues and sales, £3,892,704; stock adjustment account, £10,456; transfers as per contra, £651,451; stores on hand as at 25th December, 1911, £1,476,995; total, £6,031,607. The details of purchases of stores through the High Commissioner are as follows: Paid in England—First cost and packing, £1,273,578; freight, £121,723; inspection, £8,097; commission and shipping, £15,917; total, £1,419,317. Paid in South Africa—Insurance, £6,366; landing, £14,166; Customs and dock dues, £4,298; in transit charges, £638; railage, £1,951; sundries, £598; freight, £165; total, £28,183; grand total, £1,447,501. The distribution of the London payments was: Great Britain, £1,249,231; America, £100,121; Canada, £322; Germany, £28,689; Belgium, £19,198; Sweden, £20,652; Holland, £1,068; France, £4; Denmark, £2; Austria, £30; total, £1,419,317. Locomotives and mules were the principal items received from America; permanent way, fencing material, and cement from Germany and Belgium; varnish and spelter from Holland; and timber from Canada and Sweden. The supplies from oversea ordered by indent on the High Commissioner have not been delivered within a reasonable time, and in many instances there have been abnormal delays. In the case of material manufactured to our specifications or drawings, usually from seven to nine months, and in some instances twelve months, have elapsed before the goods were shipped. The causes of delay may be divided between: (a) Failure of contractor to deliver at the time specified in the contract; (b) goods waiting to be passed by High Commissioner's inspector. Most of the delays may be attributed to the former, and the labour troubles in Great Britain during the past year were also to some extent responsible.

The commission paid to the High Commissioner during the year amounted to £14,000 approximately. The cost of the stores and shipping branch in the High Commissioner's office is shown on the estimates as: Salaries (including consulting engineer), £8,743; add for rent proportion, printing, etc., £2,000; total, £10,743. This shows a profit on the working of the branch derived from this Administration alone of £3,257. Taking into consideration work performed for other Government departments by the stores and shipping branch, the charge of 1 per cent. is apparently too high; although 1 per cent. may be a reasonable charge for items of small aggregate value, it would appear excessive for orders of rolling stock, permanent way material, and other bulk material.

The following amounts were paid for marine insurance: High Commissioner's account, £6,366; local purchases, £163; total, £6,529; and claims were recovered to the value of £2,116, which amount includes £1,288 for a consignment of creosote lost on the voyage to Knysna. The various methods of dealing with marine insurance that were in vogue in the different Provinces at the date of Union were brought into line in September, 1911, from which date the classification adopted by the late Cape Insurance Fund was extended to the South African Railways, and the Government Marine Insurance Fund now carries risks up to £10,000 per bottom.

The allocation of the freight is: Union-Castle, 18,760 tons, value £19,198; Clan, 25,001 tons, value £27,917; Bucknall, 30,708 tons, value £36,320; Ellerman, 13,669 tons, value £14,362; American, 63 tons, value £1,059; Bullard King, 9,324 tons, value £11,078; Rennie, 7,272 tons, value £7,672; Houston, 3,299 tons, value £2,475; Chartered, 1,618 tons, value £1,636; total, 109,717 tons, value £121,723, and the average rate per ton was 22s. 2½d. All important stores purchased through the High Commissioner were inspected either in course of manufacture or before shipment, and the payments under this head were £8,097 17s. 11d. The payments were less than the previous year, principally owing to the comparatively small receipts of permanent way and rolling stock.

The amounts appearing on the balance sheet under the head of Colonial purchases are made up of: Merchants, £1,328,054; other railway departments, £443,813; other Government departments, £22,890; railage, £15,791; total, £1,810,550; and the item returned stores, etc., comprises: Stores actually returned, £481,593; miscellaneous credits, £73,060; purchases, etc., by catering and cartage departments, £171,019; stores charges, £132,111; total, £857,784. The purchases have been made in accordance with the regulations governing formal and informal tenders, which, in the majority of cases, have been for definite quantities. The question, however, of an extended system of contracts for supplies to be drawn as required should be considered. This question is to some extent governed by local conditions—local industries and preference—but I think something in this direction should be done and a trial given to a system of contracts for ironmongery and small stores.

The following summary shows the principal stores received through the High Commissioner and purchased in South Africa during the year: Bridgework, £15,194; brake gear, £23,280; coal (steam and smithy), £391,407; cement, £61,159; catering supplies, £51,202; copper, £14,209; coke, £6,733; drugs, £3,863; electric gear, £15,341; explosives, £9,917; fencing material, £18,250; forge and provender, £19,076; iron—bar, etc., £39,961; iron—galvanised, corrugated, £18,155; locomotive, carriage and wagon spares, £413,393; live stock, £19,935; machinery, £23,066; oils, £75,119; permanent way material, £454,158; provisions and rations, £172,161; piping (all kinds), £18,190; rolling stock, £381,708; rope, £7,979; steel, £32,151; stationery and printed forms, £50,572; timber, £209,109; tarpaulins, £9,592; telegraph material, £6,251; uniforms and clothing, £18,928; varnish, £7,719; waste, cotton and wool, £13,200; general, £623,710; total, £3,258,051. Ex High Commissioner, £1,417,501; ex local purchases, £1,810,550; total, £3,258,051. The value of local purchases received direct from other Colonies and foreign countries was: America, £39,850; Australia, £119,662; India and Burmah, £90,916; Norway and Sweden, £23,360; Germany and Belgium, £3,998; Java, £11,316; Japan, £304; Canada, £80; total, £292,516. The principal imports from the above countries were permanent way, fencing and electrical material, oils, timber, sleepers, cement, engine spares, oil tanks and motor cars.

The purchases of South African products were somewhat lower in value than for the year 1910, which to a great extent is explained by the cheaper rate paid for steam coal. If coal is excluded, it will be observed that the purchases have increased by about £5,000 per annum, and further assistance and encouragement will no doubt follow when the question of preference is settled. The following are some of the principal items: Bricks and fireclay, £8,884; boots and shoes, £1,545; brushware, £1,987; basketware, £328; coal, £383,510; cement, £16,706; coke, £2,476; chemicals, £514; carts and wagons, £574; candles and soap, £3,496; castings, £1,509; explosives, £7,291; flour and meal, £56,130; furniture, £1,010; groceries, fruits, etc., £12,641;

hardware, £2,733; handles, pick and hammer, £408; india-rubber and steel stamps, £722; leather goods, £2,907; live stock, £1,564; lime, £2,382; matches, £952; meat and fish, £8,657; provender, etc., £20,166; photographic material, £426; printing and advertising, £16,225; piping (all kinds), £2,108; sleepers, £22,933; stone, sand, etc., £7,201; sugar and sweets, £1,341; tobacco, etc., £3,447; tents, £3,929; timber, £3,284; tallow, £1,113; tanks, £1,388; trees and seeds, £565; tar, £568; vegetables, £1,123; wines and spirits, £5,625; clothing, £2,989; sundries, £2,132; total, £617,819. Large payments were also made for perishables, purchased and paid for direct by the Catering Department. With regard to the preference necessary to further foster and encourage South African industries, it is a difficult matter to arrive at any definite percentage basis to be paid over and above the imported cost, as from an analysis of reports on the subject I find that, with a few exceptions, when prices are actually less, South African-made wares would require preferences ranging from 1 per cent. to 60 per cent. to bring the cost into line. The present ruling of allowing 5 per cent. on material manufactured in the country is not sufficient in all cases to enable the South African article to successfully compete.

Immense quantities of stores were returned to stock during the period under review, for which credit was allowed to depôts for £481,593. The principal item was for permanent way released from relaying, large quantities of which were re-issued to various new lines. The stock of stationery held by the Transportation Department at Kazerne was transferred to this Department in September, 1911, and the whole of the South African Railway stock held by the District Superintendent at Mafekeng was taken over in October, 1911. It was also decided that the mechanical and transportation workshops should not hold reserve stocks, and large quantities of stores have been received from these sources. Large quantities of stores and material are still being returned to stock or transferred to new lines, and this will continue as long as relaying is in operation. The stores returned to stock included large quantities of scrap metal, old timber and other material useless to the Administration. It was decided to sell all the useless material, and during the year the sales of scrap metal and other old material realised £24,291. Very fair prices were received, and further large sales have been and will be held during the current year, when it is hoped to dispose of large quantities of obsolete stores.

The stock on hand at the end of the year was £1,476,995, an increase of £259,865 during the twelve months. This increase is principally due to the stocks taken over from the Mechanical and Transportation Departments and the large quantities of material held at various relaying depôts, which cannot be debited to relaying until actually put into the road. The reduction of stocks is receiving special attention, and it is hoped a large reduction will be made during the present year. The principal items in stock are:—Bridge-work, £12,129; cement, £5,323; coal, £4; catering

stock, £55,921; electrical gear, £45,008; fencing material, £5,451; iron and steel, £88,925; locomotive, wagon and carriage spares, £358,763; machinery, £19,743; oils, £10,686; permanent way material, £217,258; stationery and printed forms, £18,348; tanks and fittings, £2,292; timber, £112,604; other stores, £524,540; total, £1,476,995.

The stock adjustment account comprises five heads, viz.: (1) Stock verification; (2) adjustment in value; (3) obsolete stock; (4) profit and loss on sales; (5) profit on issues of scrap metals. The verification of the stocks is not carried out in anything like a satisfactory way, and instances are constantly being brought to light of stock which has not been checked for years. I subjoin a statement showing the transactions under each of the above heads, from which it will be observed that less than half the stock was verified during the year:—(1) Value of stock verified: As per actual stock, £729,578; as per stock ledgers, £725,524; surplus, £4,053. (2) Adjustments in value: Credit, £1,996; debit, £554; net credit to stock adjustment account, £1,441. (3) Obsolete stock written off, £1,497. (4) Profit and loss on sales: Profit, £6,283; loss, £1,524; net profit, £4,759. (5) Profit on issues of scrap metals, etc., £6,591.

In such a large concern as the South African Railways, where so many types of material are in use, the question of what is obsolete stock is a most difficult one to decide. It has been found that stock considered obsolete, say, in Natal can be used with advantage in the Transvaal or Cape and vice versa. During the year material which had been scrapped was again brought on charge and issued. This was principally drawn from the scrap bank at Pretoria, where, prior to Union, a very large amount of stock was scrapped, and it is necessary to devote careful consideration to so-called obsolete stock before a final recommendation is made. It is not sound storekeeping to write off an article before it is settled beyond doubt that it is of no further service to the Administration, and it is therefore necessary to circularise all stores depôts and consult all departments before lists are finally sent to headquarters. All this takes time, and I consider that some months will elapse before anything like bedrock is reached as far as obsolete stores are concerned.

Reduction in value is a question closely associated with obsolete stock. Many lines, especially in electrical goods, are greatly improved upon from year to year, and at the same time can be purchased much cheaper. The South African Railways are certainly overstocked in electrical goods, which are out of date, but cannot be called obsolete, and when technical officers have been approached they say they cannot make general use of these lines because the price is too high and that when they estimate for a work their figure is based on the latest improvement and price. The attitude taken up by these officers is to a certain extent justifiable, and I am of opinion that some arrangement should be made to reduce prices when material is out of date, and an amount voted each year for depreciation of stock. The value of obsolete and surplus stores on hand, as at 31st December, 1911, is set down at £148,240, but these figures must only be taken as approximate.

The S.A. Mining Directory.

The *Transvaal Leader* says:—A handbook which will be of the greatest utility to mining people as well as the general public has been issued by the S.A. Mining Journal. It is called *The South African Mining Directory*. It deals with the mining districts of the Rand, Rhodesia, the Free State, the Cape, and Natal, and includes the coal, gold, and the diamond industries. It gives an accurate list of the principal officials, from the manager downwards, and arrangements have been made to issue it monthly, so that the changing character of the personnel of the mines may be dealt with. Complete and revised lists are included of all the officials and members of the various organisations connected with the mines, such as the W.N.L.A., the new Labour Recruiting Corporation, and public bodies such as the S.A.R. and Union Mines Departments. The significance of the publication to merchants, agents, storekeepers, and the whole business community that has daily dealings with the men in positions on the mines, needs no emphasis. In a hundred different ways and in a hundred different spheres of business, the work will be found invaluable for everyday use. To merchants and agents anxious to circularise the mines and to ensure that their circulars come under the personal notice of the leading officials, the accuracy of the direc-

tory will prove of the utmost importance. And then there is the utility to business men of acquaintance with the names of the actual holders of the more important positions on the mines. Business men will also recognise the importance of knowing the correct telephone numbers, addresses and designations of the leading officials.

TO CONTRIBUTORS.

The Editor invites Contributions on any subject of interest relating to mining and other industries of South and Central Africa, as also of suitable non-copyright photographs or snapshots of mining or engineering interest. Subject to special arrangement, the scale of remuneration for all articles inserted is at the rate of Two Guineas per page, and 5/- for every photograph. No responsibility can be accepted for safe transmission, but anything that may be submitted that is not accepted will be returned if a stamped and directed envelope is enclosed for the purpose.

Correspondence and Discussion.

Comments on Questions Arising in Technical Practice or Suggested by Articles in the Journal—Views, Suggestions and Experiences of Readers.

Consolidated Main Reefs and Main Reef Wests.

To the Editor, *South African Mining Journal*.

Sir.—From time to time rumours have been set afoot regarding the amalgamation of these properties, and so often have they been officially denied. There is never smoke without fire, and I for one cannot but believe that such a consummation is on the tapis. There was talk of two for one, then six for five—based on the then current market prices. To-day I see that both stocks are quoted at par, which, by the same process of reasoning, would indicate that the proposed basis was one for one. Confirmation of this is supplied from a consideration of the past few months' outputs of these companies. The C.M.R. shows a consistent increase of profits, while the M.R.W. shows as consistent a decrease of profits. I am not in position to discuss the expediency of such an amalgamation, other than to observe that it would only be in accordance with the tendency of present-day mining economies. I wish to show, however, by means of the following comparative figures, that an amalgamation on the basis of one for one would, if anything, be in favour of the M.R.W., and that certainly nothing less would be acceptable to the shareholders in the C.M.R. The following was the position of the companies at 30th June last:—C.M.R.: Claims, 800; issued capital, £924,365; less funds, £192,162; total £732,202. Ore reserves, 610,680 tons of 7·26 dwts. over 48 inches. M.R.W.: Claims, 546; issued capital, £491,188; debentures, £300,000; less funds, £55,243; total, £735,945. Ore reserves, 685,720 tons of 6·36 dwts. over 56 inches. The C.M.R. ore reserves are improving in value, and show an increase of 50 dwt. for the year, while the M.R.W. show a decrease of 64 for the year. Then, again, the October profits are as follows:—C.M.R.: £14,815, equivalent on this basis to a dividend of 19 per cent. on issued capital, without deducting profit tax and head office charges. M.R.W.: £7,105, equivalent on this basis to a dividend of 14 per cent. on issued capital, after deducting interest on debenture issue only.—I am, etc.,

W. D.

Mooi River, 16th Nov., 1912.

Colonial Coke.

To the Editor, *South African Mining Journal*.

Sir.—'Tis said that troubles do environ the man that meddles with cold iron, but what of the unfortunate who tries to make colonial coke? Founders have always blamed the result of their own carelessness and bad management to the bad quality of the coke, and the introduction of a new brand of colonial make affords them an excellent opportunity of saving their face when their cupola scaffolds, or their castings are bad. A high price is paid for imported coke, when colonial could be had for less than half the money if some encouragement and fair play was meted out to the makers. Some time ago a piece of hard white iron was sent down to Natal as the result of using one of the best brands of colonial coke. One glance at it showed that this was the result of melting very bad scrap, and in order to prove this, a quantity of fairly good scrap was put into a cupola and melted down; the result was thoroughly satisfactory, the iron coming out almost exactly as it went in: in fact it was difficult to see any difference, either in the fracture or hardness. Another leading Rand firm tried 25

per cent. of this coke in a melting, and their cupola scaffolded badly; here again the coke was blamed, when the trouble was entirely due to bad management, in this case huge lumps of scrap being dropped into the cupola with a crane. One of the greatest causes of founders' troubles is carelessness in picking over scrap. I know an old founder who was always getting castings returned. He used to tell his Kafir helpers to smash up the scrap and put it in the cupola, until one day he took on a new man, who pointed out the foolishness of his methods. Now all the scrap is carefully examined, all doubtful stuff being put aside for fire bars, sash weights, and castings where hardness is no objection. He uses colonial coke only, and his castings are good in every respect; further, he says that he gets his iron very hot, and the skulls in the ladles are as thin as paper. A lot of nonsense is talked about the sulphur in coke. Many years ago, before washers were used, lumps of pyrites were left in, but now all coal goes through a very sensitive washer, which not only takes out shale but also removes most of the bone coal, passing over only the clean, bright, bituminous portion, which alone is coked. The sulphur in this is in a very fine state, and cannot possibly get down into the molten iron. Leading authorities in England now pass coke with as much as 1—3 of sulphur. Many founders pay little attention to the important question of flux; some use none at all, some use lumps of limestone, and their cupolas are lined with jagged masses of slag, a fruitful source of scaffolding. All limestone should be broken up small, so that some arrives at the hearth before the iron; some fine burnt lime put in with the first coke is excellent, it provides flux where it should be, in the hearth. My cupola is as smooth inside as if it had been varnished, and cleaning is no trouble. Cinder holes in castings are entirely due to want of proper flux. One of the most absurd objections to colonial coke is its want of uniform appearance. If a piece is black, or slightly over-burned, or perhaps has a somewhat granular appearance, it is condemned; all must be equally bright and clean, but this is impossible in practice, and quite unnecessary. The objectors remind one of the tramp who objected to the bread and butter given him, because it was not cut and spread to his liking. The Government officials are the most to blame, instead of being the first to help and encourage a struggling industry, they go on using the imported article in the railway shops, although trials of colonial coke were quite satisfactory; but they were always so, they refused to use colonial coal on the engines for a long time—said it would not burn, and that it destroyed the fire boxes. Coke makers have a double claim to help and sympathy, for they not only create a new industry, but they use up the fine dust coal that would otherwise be wasted. Thousands of excellent castings have been made in Natal with colonial coke, and the engineers who work them up into bark choppers, mealie shellers, and other things, say that they never had such good and uniform castings; that being so, it is very vexing to have Rand firms trying a little with fear and trembling, and condemning it, and the S.A.R. shops declaring that it is no use to them. In the Durban shops, 464 lbs. Natal coke melted 600 lbs. hard brass in 5½ hours; 464 lbs. Bear Park Durham coke melted 600 lbs. hard brass in 5½ hours, the colonial coke fire was quite as hot as the other (from official report). The boiler shop, coppersmiths, and angle iron shops, all gave equally good results. In Natal, iron ores are very abundant and good, the district around Maritzburg, for instance, could not possibly be surpassed for quantity, quality, variety, and cheapness of iron ores: ores of 50 per cent. produce are used for road making; here is pure hydrated sesquioxide 62 per cent., manganiferous ore 50 per cent., and aluminous limonites 40 per cent., on

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the surface, sufficient to supply the Union for the next 100 years. The first step towards their utilisation, the manufacture of good coke, has been accomplished. Smelting the ores, the next step, awaits a moderate capital of a few thousand pounds.—Yours, etc.,

“OBSERVER.”

Sweetwaters, 18th Nov., 1912.

Zaaiplaats and the Critics.

To the Editor, *South African Mining Journal*.

Sir,—It appears to me your article of November 9th on the ore reserves of Zaaiplaats scarcely emphasises the seriousness of the position. It is not obvious, you say, that the directors are to be held responsible for the deficiency of 69,670 tons. No, but the consulting engineer surely is to be held responsible for his glowing report and his advice to increase the plant. (I feel sure he wrote somewhere that the reserves were five years ahead of the mill, but I cannot trace it.) Is not the acting manager responsible for stating that though the ground was not completely developed, he estimated the ore reserves at 114,000 tons of 4·5 per cent. tin? Are not the directors responsible for saying that the ore bodies had increased greatly at depth, that additional twenty stamps were necessary, and that shareholders could expect increased dividends? Instead of all this, we find a year later the company in debt £26,400, has no water, barely a year's supply of ore of 3·42 per cent. tin, and there is no prospect of a dividend for the next twelve months. The only good news in the report is that there is a splendid plant and labour is plentiful! Is it for this brilliant piece of work the directors were paid nearly £6,000 a year? What could be more damning than one clause of yours: “The 69,670 tons of ‘anticipated’ (‘estimated,’ vide report) ore do certainly not exist in the places where they were supposed to be.” I noticed that the chairman now retires when the bad times have come. Can anyone maintain the mine has been treated fairly, that the report of July, 1911, should not bring shame on the heads of the consulting engineer, acting manager and directors? Shareholders presumed that estimated tonnage meant tonnage “more or less”; a deficiency of even, say, 5,000 tons perhaps would not be surprising, but sixty-nine thousand tons short! You say the directors have attempted to explain the difference in the ore reserves of July, 1911, and July, 1912. Do you call it an explanation to say that the estimated ore reserves of 1911 cannot be relied upon, because they are not there. That may be fact: it is not an explanation. The directors had not the decency to explain how they and their engineers fell into such a gross error.—I am, etc.,

E. P. DELANY.

Germiston, 12th Nov., 1912.

[The blame, it seems to us, rests entirely on the expert advisers of the company, who were responsible for the mis-calculations.—Ed., *S.A.M.J.*]

The Industry and the Labour Question.

SOME THOUGHTFUL CONSIDERATIONS.

To the Editor, *South African Mining Journal*.

Sir,—Mr. Patrick Duncan deserves much credit for his persistence in bringing “the native problem” before the notice of the Unionist Congress. It is a problem that we cannot afford to shelve, even for a moment, and since the Nationalist Party are bound up hopelessly in the bonds of opportunism and the policy of “wacht-een-bietje,” “als zal recht komen,” and the rest of it, while the Labour Party are guided by unadulterated selfishness and are as yet unable to decide where they are “going to come in,” it is essential that the only party who can tackle the subject intelligently and with honest intentions should waste no time in coming to grips with it. It is much to be regretted that the question has become to some extent associated with the white

labour fad of Messrs. Creswell, Wybergh, and others, whose attitude of detachment from personal feeling in the matter is not at all as unmistakeable as it might be. There is no doubt whatever that a gradual stoppage of the importation of native labour would compel the mines to make the best of the white labour supply, or perish, but surely if the scheme is of so promising a kind it is worth while making an experiment to find out whether it is really practicable before deciding irrevocably that it ought to be brought into action. It can scarcely be supposed that Mr. Duncan and those who have been induced to believe in the “white labour” theory are unconscious of the fact that the policy proposed is one which involves an industrial revolution. Do they imagine, then, that the mining industry and a whole sub-continent full of people dependant directly or indirectly upon it, can face a period of industrial revolution with equanimity, merely because Mr. Creswell—who really knows very little about what free white labour will do, in spite of his experiments with hungry men—and Mr. Wybergh, and the *Daily Mail*, who know less, assert that white miners can do unskilled work at a profit to themselves and their employers? It is a case in which the profound thought of level-headed men is required, not the inspired shouting of visionaries. Mr. Duncan maintains that full discussion is necessary as a preliminary to the framing of a policy, while in his anti-native-immigration scheme he has got ready a policy of an untried and most dangerous kind. We are recommended to ponder seriously over the alternatives of segregation with all its inevitably repressive accompaniments, and civilisation, or levelling-up, of the black man who is centuries behind on the path of moral and mental evolution. With the latter alternative there fall to be considered the results which will assuredly follow from the intimate association and competition of white and black artisans in almost every department of activity, and, naturally, the somewhat free association of white and black women and children. The latter condition would be loathsome; the former merely a temporary expedient. It does not seem to have occurred to these philosophers that there is another matter to be taken into consideration, and it is the physical fitness of people of European descent to engage in trials of endurance with the African native on his own soil and under climatic conditions which are vastly in favour of the aborigine. Those who have never had occasion to engage in manual labour may be confident that mental superiority and an inherited habit of industry will together prove more than a match for the ability and rude vigour of the native workman. It is a delusion. The higher mental and other inherited attributes of the European are not so essential in the field of ordinary everyday labour that they can be relied upon to make up for climatic fitness and a capacity for drudgery. It is not a pleasant thing to reflect upon, of course, but we cannot shut our eyes to the fact that under the social conditions which prevail, and are likely to prevail upon this planet, ordinary everyday labour is largely drudgery. It is not an intolerable circumstance in temperate climates, provided it is reasonably paid for, but in this country and under these skies it is at the same time both intolerable and incapable of being adequately rewarded, as far as the white man is concerned. This brief review of what I think are indisputable facts brings us to the question—Is this a white man's country, in the full sense of the phrase? If not, why worry about segregation and other puny attempts to overcome the laws of nature and human progress? The problem is, I submit, worthy of thorough investigation from every standpoint before we make up our minds what the future relations of the white and black races are to be.—I am, etc.,

AFRICANDER.

More Geological Truth Tablets.

To the Editor, *South African Mining Journal*.

Sir,—“State Mines,” alias “Government Areas,” state that they have struck Main Reef series in their shafts, but I very much doubt if our State geologists will confirm this statement, if called upon so to do, as they should be well posted in Black Reef series by this time. The nomenclature of the various reefs, and series of reefs, is something more than a matter of academic interest; for labelling “Black Reef series” “Main Reef series” is, to my mind, selling margarine

for better, and under Anglo-Saxon law is criminal. Under Roman-Dutch it is probably the same, though first offenders may get off with a "suspended sentence." Black Reef series is so unlike Main Reef series that, to your humble servant, it is incomprehensible how a scientist, or other, can possibly mistake the one for the other, and blush not at their stupidity. One-third of the monthly output of the Rand, for some time past, has not been from Main Reef series only, and Black Reef series should be credited with a large proportion of that third. The West Rand Consolidated—I do not think, but positively affirm—has yet two more payable reefs to add to its number, and they will considerably enhance the value of that vast property. Randfontein Deep, Limited, has at surface what, I take it, they are looking for in depth. The Kimberley series is not on Randfontein Deep, as depicted by certain geologists, but it has a very much better series in place of it, viz.: a vertical section of Black Reef series. The Kimberley series is some miles to the south-east, on the farm Vlakfontein, unless Nature has moved it since I was last there. Volcanic wave action, and the fanning out of country—my patent—is well exemplified on West, and reefs there have a knack of not being quite where we microbes expect them, from Central Rand deductions. Someone down below must have been kept busy injecting diabase, to fill up the splits and cracks, when Nature disrupted the Luipaardsvlei, Witpoortje, Vlakfontein area: and I should not be surprised if some day diamonds are not found in the now cooled magma, as also in the Bezuidenhout Valley area—which is still more likely. As there is some talk of working the overlying series of reefs, instead of the underlying, along the Rand, I am inclined to think that the Bird Reef series, if properly drilled and tested, will be found to be more payable than the Kimberley series: as we have the Africanda at Klerveldsorp as an example, and many other spots I could mention, misnamed though they often are. One thing is certain, if Bird Reef series is ever worked, the Cinderella Deep has it at its battery doors! What is known as the "Randfontein leader" was the first reef opened up and worked on Randfontein in the early days; but what other companies working Black Reef series ever give it a thought—rich as it is? Randfontein leader is a poor man's reef, and is rich wherever opened, but because it is not overcrowded with pebbles it is often passed over, or passed through—out east always! In sinking deep shaft the contractor hasn't time to be worried by the sampler; and then, again, what does the sampler know of stratigraphy in a wide sense? There are many surprises in store for mice and men, both east and west of the Rand, before Nature "busts up" our Southern Hemisphere carboniferous age, as she has served all

the others as soon as they reached the five mile thick limit. None of your mild, gentle shrinkage business, as some clever men think!—I am, etc.,

SCOTT ALEXANDER,
"Rand Stratigraphist."

Johannesburg, November 20th.

ANSWERS TO CORRESPONDENTS.

E. P. R. H. (Pretoria).—The two volumes of the Rand Metallurgical Practice obtainable from the Secretary, Chemical, Metallurgical and Mining Society, should suit your purpose.

Nyasa Coal.

For some considerable time it has been known that in the south-eastern part of German East Africa, on Lake Nyasa, in the Langenburg district, extensive coalfields occur, but grave doubts are entertained by capitalists and geologists regarding their payability. Generally speaking, the South African Karroo coal, which also occurs in the Katanga territory, is unfit for coking and, consequently, practically useless for industrial, and especially for metallurgical purposes. But the question is whether the Nyasa coal is Karroo coal. Its solution has been entrusted by a Berlin syndicate of capitalists to Mr. Kirschstein, a German geologist of repute, who is at present in the district for the purpose of thoroughly examining the fields. His report is expected in the near future, but, whatever the quality of the coal may be, it is not likely that the fields will prove payable unless the district is brought into direct communication with the coast by a railway.

The best "Reef Traveller" is the *South African Mining Journal*.

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Rhodesian Section.

LATEST MINING NEWS.

The Drought—Falcon Ore Values—Cam and Motor Developments—Work at the Gaika—Small Workers Meet—Mr. Mennell on Banded Ironstone Formations—The Planet Arcturus—Bushtick's October Output—The Empress Palmeira—Scottish Mashonaland Meeting.

The chief topic of conversation in Southern Rhodesia is the drought. As a matter of fact, the state of affairs of to-day is not so much due to the lateness of this season's rains, for these are really only just about due to arrive, as it is to the scantiness of last year's rainfall, and, consequently, to the almost total absence of water reserves, the drying up of wells, dams, etc. One or two showers only have been reported from various parts of the country, but these have done little or nothing to relieve the general situation which, for mining and farming people alike, has by this time assumed a quite serious aspect. It is gathered from a number of quarters that mines in some cases have to close down altogether, in others have to run their plants on short time, by reason of the water shortage, and some shrinkage of the mineral output must be expected to ensue in consequence. Fortunately, however, few, if any, of the larger reduction plants will be affected, if the rains come within a reasonable time, while on the developing properties pure and simple operations have not been interrupted. On the whole, and considering the abnormality of conditions, the mining industry has suffered very little as to production, although working costs have been expanded considerably. The increase in the cost of food supplies has added to other troubles. Thus mealies, the staple diet of 90 per cent. of the coloured labour force, which were quoted this time last year at 12s. per bag, are now ruling as high as 24s., with prospects of going higher still. This large increase in price has not, however, been of much advantage to the local growers, few of whom have stocks; on the other hand, it means, since large supplies are now being drawn from the south, that considerable sums of money are being sent out of the country.

* * * * *

The following is a copy of a cablegram which was despatched from Bulawayo to the London office of the Falcon Mines, Ltd., on the 5th inst.:—"The following is latest news from the mine: No. 5 level, No. 8 crosscut east at point 400 feet from shaft 45 feet wide, reduced value £2 3s. 9d.; No. 6 level, No. 2 crosscut east now through the reef, average assay value over 39 feet, unreduced, £4 13s. 9d., reduced £1 2s. 6d. Have commenced driving at this level with very satisfactory results. New vertical shaft 244 feet deep." The annual meeting of the company was held in London on the 7th inst.

* * * * *

The board of the Cam and Motor G.M. Company received a cablegram from the property in mail week, as follows:—"Motor Mine: No. 6 level, main crosscut intersected hanging wall of lode at 74 feet, and passed into footwall country at 89 feet. Lode well defined and exactly similar in appearance to No. 5 level for the same section. North drive (from main crosscut) extended 15 feet; average value 2 ozs. 12 dwts. South drive (being) extended in the hanging wall casing. At bottom of winze No. 1 (155 feet from main crosscut), at 80 feet below No. 5 level, assays 8 dwts. over 66 inches; at bottom of winze No. 2 (150 feet from main crosscut), at 50 feet below No. 5 level, assays 15½ dwts. over 80 inches."

* * * * *

The following is a copy of a cablegram which was despatched from Bulawayo to the London office of the Gaika G.M. Company, Ltd., on the 8th inst.:—"The following is

latest news from the mine: North shaft, No. 3 level, drive north, struck ore panning one ounce; No. 4 level, drive south, crosscut 112 feet east, just struck reef 2 feet wide, carrying visible gold. No. 8 level, drive north, average value from 200 to 230 feet, 26·3 dwts. over 60 inches. Robin Hood: No. 2 level, south drive, last 24 feet, average value 30·6 dwts. over 48 inches. Magazine Reef: Drive north off crosscut, No. 2 level, Magazine reef exposed in hanging wall carrying visible gold. Consider these very important strikes." The annual meeting of the company was held in London on the 8th inst.

* * * * *

The annual general meeting of the Rhodesian Small Workers' and Tributaries' Association was held at the Commercial Hotel, Hartley, on the 9th inst., Mr. E. A. Begbie occupying the chair. There were also present: Messrs. W. McD. Stokes, B. M. Stokes, A. E. Ward, P. R. McDonald, D. M. McBarnet, F. N. Hamblin, H. Blackmore, R. Moser, C. H. Wheildon, F. Young and E. Seale. After the minutes of the last annual meeting had been read and confirmed, the secretary read the revenue and expenditure account for the year. This account showed that at the end of the financial year there was a balance in hand of £39 6s. 3d. On the motion of Mr. W. McD. Stokes, seconded by Mr. McBarnet, the account was adopted. The meeting then proceeded to the election of officers for the ensuing year:—President: Mr. E. A. Begbie was unanimously elected president. Vice-Presidents: Messrs. W. McD. Stokes and F. N. Hamblin were elected. Committee: The following gentlemen were elected:—Concession Hill: Messrs. C. E. Simpson, H. Blackmore, P. R. McDonald, F. N. Hamblin, W. McD. Stokes, Gatooma; Messrs. C. A. Woodforde, A. E. Ward and F. Green, Hartley: Messrs. D. McBarnet and F. Young, Umsweswe: Messrs. S. H. Harnden and R. Moser. Battlefields: Mr. I. J. Minnaar, Shagari: Messrs. C. H. Wheildon, B. M. Stokes and S. H. Coker, Golden Valley: Mr. D. Abrahamson. Enterprise: Mr. H. S. Plant. On the motion of Mr. McBarnet, seconded by Mr. Hamblin, it was resolved that the annual subscription be reduced to £3 3s. A vote of thanks to the chairman concluded the meeting.

* * * * *

Contributing to the *Rhodesian Mining Review*, Mr. F. P. Mennell, F.G.S., makes some remarks on ore bodies among the banded ironstones. He writes: "Of the very considerable amount of attention which has been devoted in recent years to occurrences of gold as an impregnation among various rock masses, a large proportion has been given to the prospecting of bodies of 'banded ironstone.' It has unquestionably been justified by results, and has led to the opening up of several important deposits, of which more than one has been untouched by the ubiquitous 'ancients.' There are, however, so many localities where the ironstones are more or less auriferous and yet have proved of no possible economic importance, that it is obviously interesting to see whether some general principles cannot be laid down as a guide to the prospector. It is, of course, evident that there are no rules without exceptions, and there is certainly no accounting for everything one comes across in mining operations. Still there are some generalisations which appear to emerge when I review my own experiences and look through the records in my old notebooks. There is scarcely a mining district in Matabeleland or Mashonaland where 1-

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have not seen and sampled occurrences of auriferous iron-stone, and though some districts present curious individual peculiarities, there are many features which recur again and again all over the country."

* * * * *

The board of the Planet-Arcturus Gold Mines, Ltd., issued in London in mail week a report of developments at the mine for the quarter ended the 30th June last. This shows that the total ore reserves were increased by 18,600 tons to 115,400 tons, of an average assay value of 16½ dwt.

* * * * *

The Bushwick October output was 1,074 ozs., value £4,517. The following official communication is issued:—"In view of the change over from the old to the new cyanide works, which is expected to take place during November, it is probable that the output for November will be affected. This, however, should be made good by an increased output for December."

* * * * *

During mail week, the following cablegram was sent from the Empress Palmeira mine to the board of the S.A. Prospecting and Concessions Syndicate, in London:—"West Indo—Intermediate north winze from depth of 67 foot to 85 foot below the 100 foot level—average assay value 10 dwt. per ton. North rise—from 75 to 81 feet—average assay value 9 dwt. per ton." Office note: "The above values in the north winze are in sulphides, and the average assays given are taken across the full working faces of 6 feet by 4 feet."

* * * * *

Presiding at the general meeting of the Scottish Mashonaland Gold Mining Company, in London in mail week, Mr. Walter Forbes, referring to their principal shareholdings and investments, said it appeared to him that the fall in the South African and Rhodesian market, in which the company was mainly interested, was, apart from a natural cessation of speculation and investment, and a closing of open accounts, chiefly caused by sentiment. He was of opinion—assuming he was right—that they might expect to see the fall in prices in that market recovered before long, because in no possible way could war in the Balkan regions act detrimentally except from sentiment, on Transvaal and Rhodesian securities. No diminution of output, no cessation of dividends, no setback in the value of agricultural land, could as far as he could see, result from the unhappy outbreak which had occurred. On the contrary, if the war continued for any long period, it seemed to him to be well within the bounds of probability that investors might turn their attention towards countries such as South Africa and Rhodesia as being outside the regions affected by war, and, consequently, as profitable for investments.

Falcon Mines

AN ESTIMATE OF FUTURE PROFITS.

The report of the directors for the year ending June 30 deals very fully with the company's various possessions, which are extensive. They then proceed to refer to the sympathetic development work which has continued uninterrupted, an ample supply of both white and native labour having been available at all times. The footage completed during the year was 5,937 ft., bringing the total footage at June 30 to 18,841 ft. Full details of the results are embodied in the report of Mr. A. J. Frazer, one of the engineering staff of the Gold Fields Rhodesian Development Co., Ltd., and his report has been endorsed by Mr. H. A. Piper, the eminent mining expert. An outstanding feature is the marked increase in the value of the Falcon ore in depth—the large tonnage blocked out during the year having an average value of 20·2s. per ton more than the sulphide ore previously developed. Although the development so far carried out on the Athens section has been disappointing, the consulting engineers are of opinion that it has every chance of developing into a good mine. All estimates of values are based as before on gold at 4s. per dwt., and copper at 10s. per unit, of £56 per long ton of standard copper. With copper at £75 per ton, an additional value and profit of about 11s. per ton of ore must be added. Including 100,000 tons of ore already exposed between the 5th and 6th levels, the total ore reserves at June 30 were about 730,000 tons, containing a total value of £1,757,000. or, on the basis of the present price of copper, over £2,100,000, and from the engineer's report it is seen that the tonnage partly blocked out, but not included in the actual reserve, is fully as great as it was in the previous year. The erection of the plant to deal with 500 tons per day, is being proceeded with and the engineers hope to have it fully at work before the end of 1913. On the basis of the average value of the ore so far developed, with working costs at 35s. per ton, and with copper at £56 per ton, the profit, when the present plant is completed, should exceed £120,000 per annum, or, with copper at £75 per ton, £225,000 per annum.

Jupiter G.M. Co.

Development Work.—Number of feet driven, risen and sunk, 2,932.5ft.; estimated number of tons developed, 42,336*; or crushed, 119,300 tons; gold recovered, 29,963.79 ozs.; revenue from gold £125,817; working expenditure, £112,516; cost per ton milled, 18s. 10.35d.; profit on working, £13,302; profit per ton milled 2s. 2 7d.; sundry revenue, £1,014; total profit, £17,315; appropriation for renewals fund, £61; estimated net profit, £17,245; reserve gold at 30th September, 1,250 ozs. The amount expended on capital account during the quarter was: On plant buildings, £2,596; shaft sinking, £2,039; development, £10,460. A credit to development of £11,961 was charged into working costs.

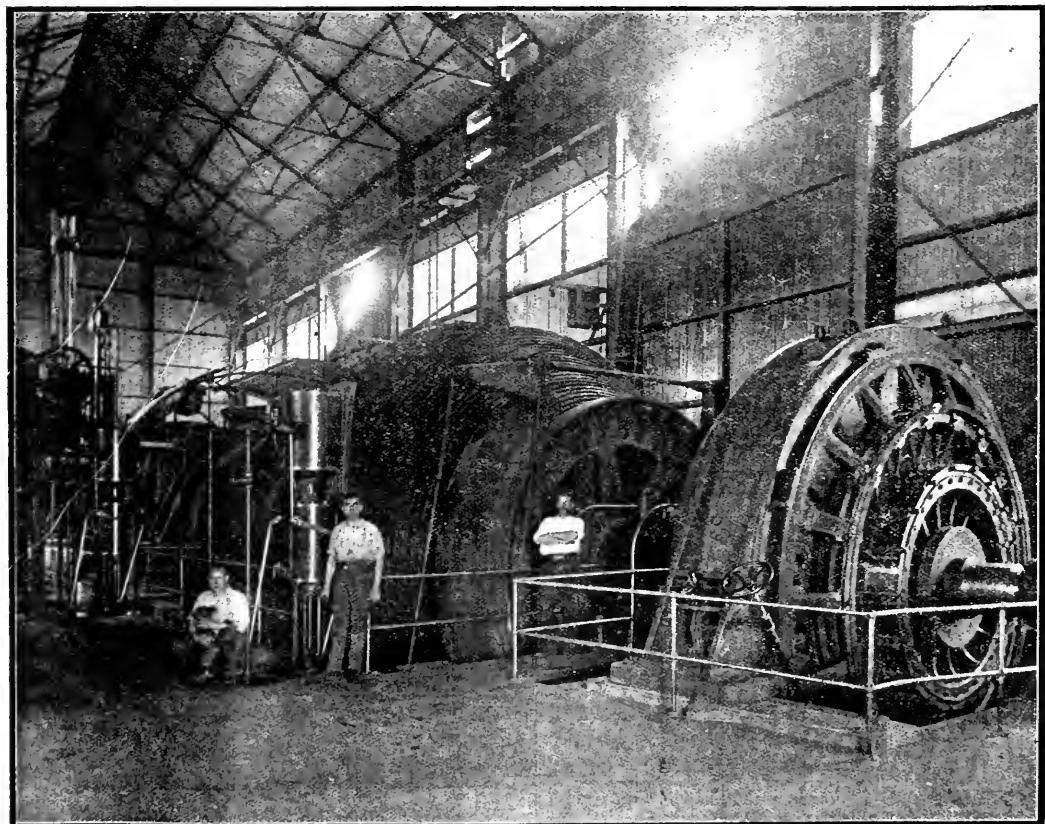
Engineering Notes and News.

New Electrical Installations at the Cape.

The Capetown Municipality have considered a report from the Electrical Engineer, dated 10th October, 1912, stating that owing to the large number of applications received for new installations of electric light, he finds great difficulty in obtaining the necessary materials for extensions to the distributing system and the making of services, and submitting list of wires and cables for general extensions in Capetown, Sea Point and Woodstock, and alterations in the system in the southern suburbs, which he considers it necessary to have in stock, estimated to last about six months. A copy of the list, showing the estimated cost of the materials, is laid upon the table, and includes 33 miles of aerial braided and 15 miles of vulcanised rubber wire, required for overhead services and extensions to the distributing system from Sea Point to Wynberg; one mile concentric high tension cable, and 1,100 yards of 3-core high tension cable, rendered necessary owing to the increase in the number of consumers in Green Point and Sea Point. In this connection, the Electrical Engineer states that when the extension to Green Point and Sea Point was undertaken, provision was made for 220 consumers, having a total of 5,580 16-c.p. metallic

filament lamps, while up to the end of September last the number of consumers in this district totalled 292, with a total capacity in 16-c.p. metallic filament lamps of 7,000, and unless extensions to the high tension feeders are undertaken very shortly, the efficiency of the private lighting may be impaired.

The Engineer further states that it will also become necessary to increase the size of the sub-station, and provide an additional feeder panel and two more transformer pillars; the total estimated cost of which, with the necessary cable, in Green Point and Sea Point is £800. Fifty yards of 3-core low tension cable, and 9,520 yards of bare copper wire, at an estimated cost of £525, are required to make provision for consumers applying for light in the neighbourhood of Observatory Station Road, and at the same time making provision for the connecting up of Messrs. Lever Bros.' factory. In addition, some 2½ miles of various sized armoured cables are required for underground services in Capetown. The Committee are satisfied that the best interests of the Council will be served by obtaining a stock of the various cables and wires, and recommend that the Council authorise advertisements to be published, inviting tenders for the supply of not less than the quantities specified, upon receipt of which the Committee will consider the same, and submit a suitable tender or tenders to the Council, for their acceptance, the expenditure incurred being debited to loan funds.



ELECTRIC HOISTS AT SOUTH RAND SHAFT OF THE CROWN MINES, LIMITED

ELECTRICALLY-DRIVEN WINDING ENGINES IN SOUTH AFRICA—II.*

[By A. W. BROWN, A.M.I.E.E.]

MACHINE LOSSES.

Alternating-current Motor.

No-load losses	... ...	46 electric h.p.
C ² R at 1,500 h.p.	... ...	34 electric h.p.
Full-load efficiency	... ...	93.8 per cent.

Ward-Leonard Equipment.

		Electric h.p. at full load.
Winding motor	... ...	Excitation 16.5
		Brush friction 6
		Iron loss 20
		C ² R 40
Direct-current generator	... ...	Excitation 8.5
		Brush friction 16
		Friction and windage 21
		Iron loss 23
		C ² R 30
Alternating-current motor	... ...	No-load losses 54
		C ² R 26
Alternating current hoist :		Electric h.p.
Air-compressor and controller pump	... ...	11
Ward-Leonard hoist :		
Air-compressor only	... ...	6

From the above figures, the power consumption is :—

Alternating-current Hoist.—114,720 electric h.p.seconds per wind, plus 11 electric h.p.seconds for each second of standing time above the 20 seconds allowed.

Ward-Leonard Hoist.—163,490 electric h.p.seconds per wind, plus 11 electric h.p.seconds for each second of standing time above the 20 seconds allowed.

Assuming that both hoists are in operation for 16 hours per day, and 360 days per year, and that they are actually hoisting rock during 60 per cent. of the time when they are in service, and standing idle, but ready to run, during the remaining 40 per cent. of the time, the Ward-Leonard hoist consumes 204 units per day less than the alternating-current hoist. As the price of power is about 0.6d. per unit, this amounts to 10s. 2d. per day, or £153 in a 360-day year. The cost of each complete hoist, delivered, was about £8,511 for the Ward-Leonard hoist, and £6,511 for the alternating-current hoist. The alternating-current hoist is the cheaper by £1,700; consequently, the direct-current hoist must show sufficient economy to pay interest and depreciation on that amount before it can be placed on an equal footing for economy. Assuming interest and depreciation to be 6 and 5 per cent. respectively, this will amount to £187, excluding extra oil, spares, and attendance, and as the saving in power consumption is £153, the Ward-Leonard hoist is not, in this case, the equal of the alternating-current hoist for economy.

At the time when the Brakpan hoists were put into operation, they were the largest electric winders at work on the Rand, but since then still larger alternating-current winders have been started at the City Deep and Village Deep Mines. These hoists comprise one new double-drum hoist and two Whiting hoist conversions at each mine. All six are of equal size, the motor capacity being 1,600/4,000 h.p. at 98 revolutions per minute, and, as at Brakpan, the rotors had to be built up and wound on the site.

* Abstract of Paper read, October 12, before the North of England Institute of Mining and Mechanical Engineers.

The double-drum hoists are intended principally for winding the men, tools, timber, explosives, etc., so that considerable weight has to be lowered at times. The alternating-current motor is not well adapted for such a service, although it can perform it. Mechanical brakes are not good, as they fire at the high speeds employed, and wear very rapidly when used continuously.

To enable the loads to be safely lowered, an electrical brake was fitted, consisting of a water-cooled stator of cast iron, surrounding a field magnet system similar to those used in the engine type of alternating-current generators, and keyed to the drum-shaft. When the magnet-ring rotates, and the field is excited, the induced eddy currents in the stator exert a very powerful drag on the magnet ring, thus giving a braking effect without mechanical friction.

In actual service this brake has shown itself capable of lowering an unbalanced load of 9,000 lbs. at a speed of 200 ft. per minute, and of controlling the speed up to the full speed of 3,500 ft. per minute. The brake can be applied at any speed without shock, firing, or wear; indeed, the higher the speed is the greater is the braking effect produced, which is precisely the opposite effect to that of a mechanical brake. Air-brakes are provided, in addition to the electric brakes, for holding the hoist when at rest.

All six hoists are equipped with similar brakes, so that any hoist may be used for lowering loads as required. Direct-current for exciting the field magnets of the brakes is obtained from a small motor-generator set, working in conjunction with a battery of accumulators, which guard against accidents due to any unforeseen failure of the power supply.

UNDERGROUND WINDERS.

Owing to their location, underground hoists must be as simple and as compact as possible, so as to reduce the amount of excavation required, the difficulty of lowering the parts of the hoist down the main shaft, and of transporting them along the roads to the site. They are, therefore, of the alternating-current geared type. The future may bring underground Ward-Leonard winders, but so far none has been installed.

Many further instances could be given of electric hoists, but sufficient have been given to indicate that the problem has received every attention from the responsible engineers on the Rand. The number of new winders that have been installed, the number of conversions that have been made, and the repeat orders that are being placed, show the favour in which electric winders are held. It is very unlikely that any large steam winders will be installed on the Rand in the future.

The Nissen Stamp.

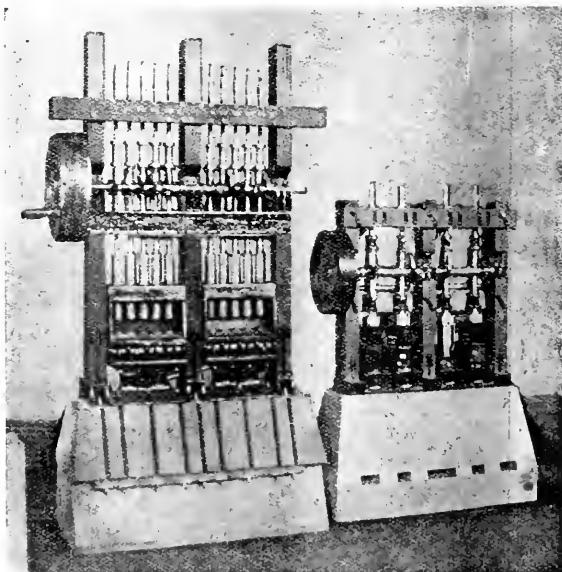


Illustration of Nissen stamps, of which much more is likely to be heard in the near future. The Nissen stamps are shown on the right; the other battery is of ordinary Californian type.

TRADE HIC MARK.

H. INCLEDON & CO., LTD.

Head Office, Birmingham. (Regd. in England.)
Phones 1911, 1912. P.O. Box 3620, Johannesburg.

ALL SIZES OF

PIPING, FITTINGS,
VALVES, $\frac{1}{8}$ in. to
18 in.

CAST STEEL VALVES

For 1,300 lbs. Working Pressure.

STOCKS IN JOHANNESBURG AND DURBAN.

Finance, Commerce, and Industries.

The interim dividend at the rate of 6½ per cent. per annum which has just been declared by the directors of the Union-Castle Mail Steamship Company, compares with 4 per cent. per annum at this time last year. The matter is mainly of interest to the proprietors of

the Royal Mail Steam Packet Company, which concern, under the arrangement arrived at some ten months ago, holds the bulk of the Ordinary capital of the Union-Castle Line. The distribution now announced goes some way towards justifying the high price paid by the Royal Mail Company for its interest in the Union-Castle Company.

* * * * *

An influential deputation from the Natal Sugar Association, and representing the unanimous views of

Natal Sugar Planters.

the South African sugar industry, waited on the Minister of Finance this week and discussed with him various points relative to the sugar industry. The principal feature advocated by the deputation was that the recommendation of the Trade and Industries Commission be adopted, which urged the preference sailing rates be abolished and compensating duties be imposed on sugar. The deputation also asked that a dumping clause be enacted on the lines of the Australia and Canada Acts, and finally that steps be taken to give relief from severe competition of bounty-fed sugar introduced into the Transvaal from Mozambique free of duty, and other disabilities under which the industry labours were specially gone into. The Minister of Finance extended a courteous hearing to the views laid before him, and without giving any definite pledge on the various matters undertook to give them full consideration.

* * * * *

The following figures summarise the year's working of the S.A.R. in 1911 compared with 1910. Total

S.A.R. Details

route of mileage on open lines, 3 feet 6 inches gauge, 7,105, an increase of 415. Two

feet gauge, 142 miles, an increase of 62. Number of locomotives, 3 feet 6 inch gauge: 1,393, a decrease of 12; 2 feet gauge, 28, an increase of 3. Coaching vehicles, 3 feet 6 inch gauge, 2,205, an increase of 134; 2 feet gauge, 69, the same as last year. Goods stock, including vans, 3 feet 6 inch gauge, 23,000, an increase of 514. Train mileage, 25,521,713, an increase of 1,941,067. Passengers carried (journeys), 37,165,679, an increase of 3,461,848. Tonnage of goods and coal (revenue earning), 11,080,075, an increase of 371,338. Tonnage of coal and stores for open lines, 1,738,236, an increase of 32,131. Gross tonnage (revenue and non-revenue earning traffic), 12,818,311, an increase of 403,472. Livestock carried—Large animals, 452,781, a decrease of 21,111; small animals, 2,257,017, a decrease of 45. Earnings: Coaching £3,181,883, an increase of £295,109. Goods and mineral, other than coal, £5,936,260, a decrease of £338,135. Coal, £2,014,212, a decrease of £2,888. Livestock, £388,595, an increase of £3,793. Miscellaneous, £280,789, a decrease of £11,148. Total earnings, £12,104,769, a decrease of £52,969. Expenditure: Maintenance of permanent way and works, £1,257,920, an increase of £135,632. Maintenance of equipment, £1,310,088, an increase of £112,378. Non-recurring expenses, £1,698,590, an increase of £57,313. Traffic expenses, £1,510,515, an increase of £131,381. General charges, £126,271, a decrease of £138,681. Total, excluding renewals, £6,203,411, an increase of £299,050. Renewals of permanent way, £331,675, an increase of £52,671. Equipment, £678,981, an increase of £202,456—total renewals, £1,013,656, an increase of £255,130. Total Expenditure, including renewals, £7,217,070, an increase of £551,180. The surplus of earning over working expenditure and renewals is £1,887,699, a decrease of £607,149. Other miscellaneous receipts amount to £175,603, an increase of £101,516. Interest payable on capital, £2,426,973, an increase of £25,830. The net profit, after payment of interest, is £2,636,319, a decrease of £128,133. The earning per train

mile is 9s. 5½d., a decrease of 9½d. The earnings per open mile are £1,669, a decrease of £88. The expenditure per train mile is 5s. 7½d., an increase of 1 of a penny. The expenditure per open mile is £995, an increase of £32. The expenditure per cent. of the earnings is 59½2, an increase of 1½2. The percentage of gross profits on capital entailed to interest is £6 12s. 2d., a decrease of 17s. 9d. The total staff employed at the end of the year was:—Whites (excluding white labourers), 23,549, an increase of 1,153. White labourers of all grades, 3,812, a decrease of 130. Coloured, Indians, and natives, 25,047, an increase of 1,430—total, 52,408, an increase of 1,430.

* * * * *

The first issue of the *South African Mining Directory* is now ready, and may be had from this office.

S.A. Mining Directory.

The directory is being issued under the auspices of the *South African Mining Journal*, and promises to fill a long-felt want. It contains nearly four thousand names of officials of the mines in the Union and Rhodesia, and includes their addresses and designations. To mining men, and to all doing business with mining men and the mines, the work should prove invaluable. Features are made of a complete list of small mining concerns throughout the Union, with their addresses and names of owners or managers. A particularly useful and unique feature is a complete list of the principal officers of the public services, such as the S.A.R. and Union Mines Department, and of all the big organisations connected with the mines. The whole forms the most exhaustive and authoritative guide to the personnel of the great industries of the country, and is a veritable mine of exclusive information of a kind that has never before appeared in print.

Lonely Reef G.M. Co.

The following telegram has been received from the Lonely Reef mine, giving details of the October output: Mill ran 28½ days, crushing 3,882 tons, yielding 960 ozs. gold; treated by cyanide, 3,862 tons, yielding 2,532 ozs. gold; estimated value, £11,681.

German Electrical Industry.

Writing in the *Times*, Mr. B. Grünzweig points out the part which the great banking houses of Germany have played in the development of the most powerful electro-technical concerns. In every phase the intervention of the banks must be regarded as typical of the intimate relations now prevalent in Germany between capital and industry. The mutual interaction between these two forces has influenced the economic welfare of the nation in the most beneficial manner. A very special connection exists between certain of the leading German banks and two of the great companies. On the Committee of Management of the A.E.G. the most prominent financial firms are represented among the directorate, and many other important banking houses have their delegates; and the same may be said in respect of the management of the Siemens group, which is intimately allied with the banking world.

Van Ryn Deep.

The report of the directors for the quarter ended 30th September, 1912, states:—Shafts.—The West Incline Shaft was sunk 385 feet to a total depth of 2,417. Development.—The total footage driven, risen, and sunk (exclusive of shaft sinking) amounted to 4,316 feet. The ore reserves were increased by 163,198 milling tons—of an average assay value of 9.0 dwt. At the end of the quarter the payable ore reserves stood at 891,016 milling tons of an assay value of 7.67 dwt., the average width of reef being 27.5 inches, and there were also developed 338,021 tons of unpayable ore of an assay value of 2.91 dwt. The Eastern and Central Sections of the mine continue to open up well. The Western Section has not been too satisfactory, though at the end of the first level a rise is being put up, and a winze is being sunk in ore of fair grade and of considerable width. Surface.—The staff houses and offices have been completed and are occupied. The excavations for the mill and tube mill plant and for the eight sand treatment tanks have been completed, and those for the slime plant and Butters' filter started. Four of the concrete mortar blocks for the mill and concrete foundations of the sand collecting tanks have been cast. The new transformer house has been finished, and the workshops and a change house for tropical natives well advanced.

At the New Rhodesia Mines meeting in mail week, the Marquess of Winchester was able to give **New Rhodesia Mines.** a very good account of the developments on the Kameel property. Work is so far advanced that crushing is expected to start early in the new year. At one point, as reported by cable, the reef assays 1 oz. 11 grs. per ton over 20·7 inches. Only £4,500 has been spent in the development of this property, which, however, it should be remembered, is worked on joint account; thus New Rhodesia has so far spent £2,250. The company has large share interests in Bwana M'Kubwa Copper Mines, Falcon and City Deep. The latter is expected to pay a dividend next February. Like most other companies, a large amount has had to be written off for depreciation on investments, and the loss on those realised amounted to £6,443. Mr. J. Eustace, one of the directors, spoke favourably of the company's interest in the Krist claims of the Porcupine district, Northern Ontario.

Contracts Open.

The Municipal Corporation of Cradock, Cape Province, South Africa, invites tenders for the execution of the following works in connection with the Municipal Electricity Supply Undertaking: Section A: Machinery and Plant.—Two 50 kilowatt "Diesel" oil engines and dynamos, complete with pipework and accessories, battery of accumulators, balancer, booster, switchboard with connections, accessories and foundations for same. Section B: Electricity Supply Mains and Public Lighting.—Underground feeder cables, aerial distributing lines, street lamps, fittings and accessories, feeder pillars, service cutouts, meters and meter boards, etc. Section C: Buildings.—Applicants must state for which section or sections they wish to tender, in order that the requisite drawings may be forwarded to them. Tenderers are at liberty to tender for any one or for all sections, but not for part of a section (December 2).

The South African Railways and Harbours invite tenders for the supply of the following:—Antifriction grease, carbide of calcium (December 3).

The South African Railways and Harbours invite tenders for galvanized steel sheets (December 31).

The South African Railways and Harbours invite tenders for the supply of 3,750 wheelbarrows (January 7).

The South African Railways and Harbours invite tenders for the supply of coloured cotton waste (November 26).

The Johannesburg Hospital invites tenders for the supply of hardware and soft goods to the Johannesburg Hospital for twelve months, commencing 1st April, 1913 (November 23).

The Germiston Municipality invites tenders for the supply of 3in. iron piping, 11,500 feet, 2in. iron piping, 1,000 feet, and sundry bends, T's, hydrants, valves, etc. (November 27). Also for the supply of the materials required in connection with the trackless tramways scheme, as follows:—(1) Rail-less cars and tower wagon; (2) cables, trolley wire, feeder pillars, span wire, etc.; (3) converters, transformers, switch gear, etc.; (4) overhead fittings, ears, insulators, strains, frogs, crossings, etc.; (5) poles, bracket arms, scrolls, etc. (February 3).

The Borough of Durban invites tenders for the erection of a steel and concrete coal store at the Municipal Power Station, Alice Street (December 4).

The Secretary to the Tender Board, S.A.R. Headquarter Offices, Johannesburg, invites tenders for the supply of hardwood logs and planks (January 14).

New Patents.

536. Ernest Melville Allen.—Improvements in carburettor jets for internal combustion engines.
537. George Francis Jones and Michael and William Fleming.—Improvements in solutions or liquids for allaying dust, and for other purposes in mines and the like.
538. John Dowell Ellis, and Sidney Allelyne van Lingen, and John Hobson.—Improvements in means for atomising or comminuting liquid hydrocarbon for use in internal combustion engines.
539. Matthew Jordan Adam.—Improvements in means for extinguishing fires in or about buildings, and for protecting adjacent buildings and like structures from such fires.
540. Bartle and Company, Limited, and James Dunlop Wilson.—Improvements in fuse lighting devices.
541. Eber Nice, and Spencer, Charles William Fleischer.—Improvements appertaining to tubular grinding mills.
542. Goga Constantinescu.—Improvement in vapour generators.
543. John Harris.—Improvements in or relating to mechanical ore roasting and like furnaces.
544. Wilhelm Propach.—Improvements in explosives.
545. Lily Machanik.—The making of glass from the mine dumps.
546. Allan Macgregor Ritchie, and John McCullum.—Fabric for covering and decorating walls and ceilings.
547. Charles Ashton Henry Bullock; The International Stamping Machine Company, Limited.—An improved machine for delivering and affixing postage stamps and the like.
548. William George.—Improved explosive cartridge.
549. William George.—Improved fuse.
550. Henry William Rogers.—Dust catcher for catching dust from machine and other drills.
551. William Frost.—A new and improved substitute for coffee, chickory and the like manufactured from prickley pears.
552. William Frost.—Improved food for cattle and the like, and producing same from prickley pears.
553. Joseph Stamp.—Improved safety catch for mining cages and the like.
554. James Clayton, and Richard Taylor.—Improvements in valves for steam or water or other liquids or fluids.
555. John van Nostrand Dort.—Improvements in agitators for use in the treatment of ores.
556. Frederick Henry Addis.—Improvements in and relating to paneling for railway vehicles.
557. John Joseph Attmore, and Joseph Barrie.—An improved torch for lighting fuses for blasting and the like.
558. Lancelot Burn Taylor.—An air and water dust layer for mines.
559. James Hamilton.—An improvement for rock drill standards.
560. Martin James Adams.—Improvements in rail joints.
561. John Hawthorne Wilson and Robert Craib.—Improvements in centrifugal pumps.
562. Herbert Clark.—Improvements in devices for holding drinking water for poultry and the like.
563. Leopold Stern.—Improvements in tin boxes applicable for various purposes.
564. John Scott.—Improvements in drills and drill holders.
565. John Cairns.—Improvements in and relating to wire fencing.
566. Pascal Marino.—A process of superficially metallising the surface of cast-iron, wood, gypsum, paper, and other porous substances of articles.
567. Richard Wild.—Improved handle for spades, shovels, forks and the like.
- 568.—Adamson George Wild.—Improvements in and relating to buffers and draw gear for railway carriages or vehicles.
569. Percy Henry Shailer and Walter Sully.—Improvements in automatic couplings.
570. Joseph Henry Brown and Saxone Shoe Company, Ltd.—An improvement in the manufacture of toe cases or toe boxes for boots and shoes.
571. Harry Robinson.—Improvements in braking electrical hoists.
572. Edward Henry Johnson and Arthur Henry Winterton.—Ore separating means.

STEEL CASTINGS

OF EVERY DESCRIPTION.

BEST CAST STEEL FOR ENGINEERS' & SMITHS' TOOLS.

GRIZZLEY BARS.

EDGAR ALLEN & CO., LTD., Imperial Steel Works, SHEFFIELD.

(INCORPORATED IN ENGLAND).

Representative : C. F. WILLS, 5, New Club Buildings, JOHANNESBURG.

THE WEEK IN THE SHAREMARKET.

Hopes of Peace Dashed—Upward Tendency Followed by Relapse.

THE pressure of the war on all markets was well illustrated this week by the relief that followed the receipt of rumours of peace. Hopes, however, were quickly dashed, and markets apparently must remain in suspense until the issues are more definitely decided. Meanwhile, it is perfectly clear that the South African market is in an excellent condition to respond to good news. Labour is giving less trouble, dividends will be making their appearance in a few weeks' time, and excellent developments are reported from most of the mines. With the break up of the drought, the tin mines are again getting into their stride, and better prices for all tin stocks may be looked for. The outlook for diamonds is most reassuring, and several of the syndicates recently floated are said to be shaping well.

* * * * *

Friday, Sat., Monday, Tuesday, Wednesday, Thursday.

15th 16th. 18th. 19th. 20th. 21st.

African Farms	15	6	15	9	15	5	15	3	15	0B	15	6B	
Apex Mines	25	0B	26	0	26	0	25	3	24	0B	25	0B	
Bantjes Consolidated	...	23	0B	23	9B	23	0B	23	0B	...	...	...
Benonis	...	4	3	4	3	4	1B	4	1B	4	1B	4	1B
Bushveld Tins	...	0	10B	0	10B	0	0	10B	0	10B	0	10B	
Brakpan Mines	79	6B	81	3B	80	6B	89	0B	81	6	81	6B	
Blaauwbosch	26	6B	...	...	...	...	27	6	28	0	...	...
British S.A.	23	0B	28	0B	25	6B	...	...	...	...	...	...
Breyten Collieries	30	0	30	0B									
City and Suburban	47	0B	47	6	47	6	48	0	43	0	48	0	
City Deeps	60	6	60	9B	61	0B	...	60	9	61	0B	...	
Cloverfield Mines	6	5B	6	1B	6	4B	6	3B	8	4	6	5B	
Cons. Langlaagte	27	6B	28	6	25	6	28	6	28	6B	28	0	
Cons. Main Refs.	19	9B	20	0	19	9	19	3	19	9	20	0B	
Coronation Freeholds	0	6B	0	7B	0	7B	0	6B	0	6B	0	...	
Cons. Mine Selections	11	0B	12	0B	12	6B	12	6B	...	...	...	...
Glydesdale	...	10	0B	9	0B	...	...	...	...	...	...	...
East Rand Cent.	12	3B	12	6	12	3B	12	3B	12	6B	...	...
East Rand Coals	2	5B	2	4B	2	6	2	5B	2	5B	2	5B	
East Rand Deeps	2	8B	2	9	2	8B	...	2	6B	2	7B	2	7B
East Rand Props.	55	0B	56	0B	56	4B	55	0B	54	0B	57	0B	
East Rand Deb.	£92	£92	£92	£92	£92	£92	£92	£92	£92	£92	£92	...	
Eastern Gold Mines	1	1B	1	10B	1	11B	1	11B	1	11B	1	11B	
Frank Smith Diam.	9	0	9	6B	9	6	9	0B	...	9	6B	...	
Govt. Areas	22	6	22	0	22	0	21	8B	21	9B	22	0B	
Glencoe (Natal) Colls	7	0B	7	0B	...	7	3	7	0B	7	0B	...	
Geduld Props.	23	6B	24	9B	24	0B	...	23	0B	24	0B	...	
Hex Rivers	...	2	6B	3	0B	...	...	2	6B	2	6B	...
Jupiters	...	12	6B	12	9	12	6B	12	9	12	6B	12	8B
Klerksdorp Props.	3	0B	3	0B	3	0B	2	10B	3	0B	3	1B	
Knight Centrals	12	6B	13	0	13	0B	12	9B	12	6	12	9B	
Luipaardsvlei Estates	11	0B	10	0B	10	0B	10	3B	12	6B	10	0B	
Lace Props.	...	4	2B	4	2B	4	1B	...	3	9B	4	0	
Lydenburg Gold Farms	2	6	2	6B	2	4B	...	2	4B	2	4B	...	
Main Reef Wests	19	6B	19	9B	19	6B	19	0B	19	6B	20	0B	
Modder B's	65	6B	67	0	67	0	66	0B	66	3B	67	9	
Middelvlei Estates	1	6B	1	4B	1	6B	1	6B	1	5B	1	4B	
Modder Deeps	41	3B	41	9	41	3B	41	0	40	0B	41	0B	
New Eras	...	7	6B	7	0B	7	9B	7	9B	7	10B	...	
New Kleinfonteins	28	0B	26	0B	25	0B	26	3	23	0B	28	3B	
New Rietfonteins	8	6B	8	6B	8	3B	...	3	0B	8	9B	...	
New Boksburgs	2	0B	2	0B	2	0B	2	0B	2	3B	2	3B	
New Geduld Deeps	2	9B	2	9B	2	8B	2	8B	2	9B	2	7B	
New Eland Diam.	25	0B	25	0	26	0B	...	28	0B	...	...	...
Orange Diamonds	1	6B	1	7B	1	7B	1	7B	1	7B	1	9B	
Pretoria Cement Co.	56	0B	56	3B	56	0B	56	0B	56	0B	56	0B	
Princess	...	10	0B	10	0B	10	0B	...	...	9	3B	...
Roodt Durban Deeps	23	6B	...	21	9B	...	...	24	6B	...	...	...
Rand Nucleus	2	9B	2	10B	2	10B	2	8B	2	9B	2	9B	
Randfontein Estates	30	0B	31	0	32	3	31	6B	30	6	32	0B	
Randfontein Deeps	5	9B	6	0	6	1	...	6	0B	0	0B	...	
Rooiberg Minerals	31	6B	31	6B	31	6	31	0B	30	9B	31	3B	
Rand Klips	6	2	6	1B	6	1B	6	1B	6	0B	6	0B	
Rose Deeps	...	...	...	...	...	...	...	...	...	...	...	...
Rand Collieries	7	0B	7	9B	7	9B	7	0B	...	...	...	...

B Buyers.

B Sellers.

	Friday, 15th.	Sat., 16th.	Monday, 18th.	Tuesday, 19th.	Wednesday, 20th.	Thursday, 21st.
Ryan Nigels	...	3	0B	...	...	...
Robinson Deeps	45	0B	45	0B	45	0B
Simmer Deeps	2	9B	2	6B	2	9
South African Lands	4	7	4	8	4	7B
Sub Nigels	8	3B	8	6	8	6B
Springbok Mines	16	3B	16	9B	16	6B
Shebas	5	8B	5	4B	5	6B
Trans. G.M. Estates	52	6B	52	6B	52	0B
Trans. Coal Trusts	47	0	47	6	47	0B
Temple Tins	...	0	9B	0	9B	...
Van Ryn Deeps	19	3	19	3B	19	3
Village Deeps	43	0B	...	42	0B	41
Vogel Cons. Deeps	1	4B	1	4B	1	0B
Witwatersrand	80	3B	...	61	0B	60
Wolbuters	15	0	18	0	17	9
Wit. Deep.	53	0B	54	0B	54	0B
West Rand Est.	...	...	3	6B	3	6B
West Rand Con.	16	6B	16	0B	16	6B
Zaalplaats	24	0B	25	0	24	3B
						24
						S Sellers.

The situation of the diamond market is referred to by the Antwerp trade correspondent of the *Berliner Tageblatt*, who states that the London market for crude diamonds manifests its usual active appearance, notwithstanding the war in the Balkans, and that English producers do not seem to trouble themselves about Balkan events. Since the Premier Diamond Company raised prices by 4½ per cent. for all qualities in September, the De Beers Company has made a general advance of 5 per cent., which has, however, not prevented all visible supplies of Kimberley stones being taken out of the market. As to the recent convention concluded between the Premier Company and De Beers, the correspondent remarks that both companies are formally separate, but in reality there exists a kind of fusion, as the Barnato group, which controls the De Beers Company, possesses nearly one-half of the Premier shares and has several representatives on the board of the latter. At the same time, the absorption by these two large producers of the still existing small diamond mines in South Africa is being continued, and even the purchase of the small River firms is also in contemplation. Trade has proved to be very satisfactory in German stones. The syndicate, which has made several price advances since April, is now leaving quotations as they stand. It is asserted that several large series of half-carat German stones have found buyers at a price of from 130 francs to 135 francs, and that the most recent shipments from South-West Africa contain more half-carat diamonds than former deliveries. In these circumstances the profits of the Antwerp Syndicate in the present year will be considerably increased. Since the foregoing was written, it is reported from Antwerp that the first indications of depression in consequence of Balkan events are apparent in Antwerp and Amsterdam, where business in cut stones has now become quiet.

INVESTORS' DIARY.

The following company meetings have been announced:—
 Nov. 27.—New Boksburg G.M.; Rand Klip.
 Nov. 28.—Transvaal and Delagoa Bay Investment Co., Ltd.
 Dec. 1.—Nourse Mines.
 Dec. 20.—Breyten Collieries; Elandsfontein Estate Co.

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Automobile Notes.

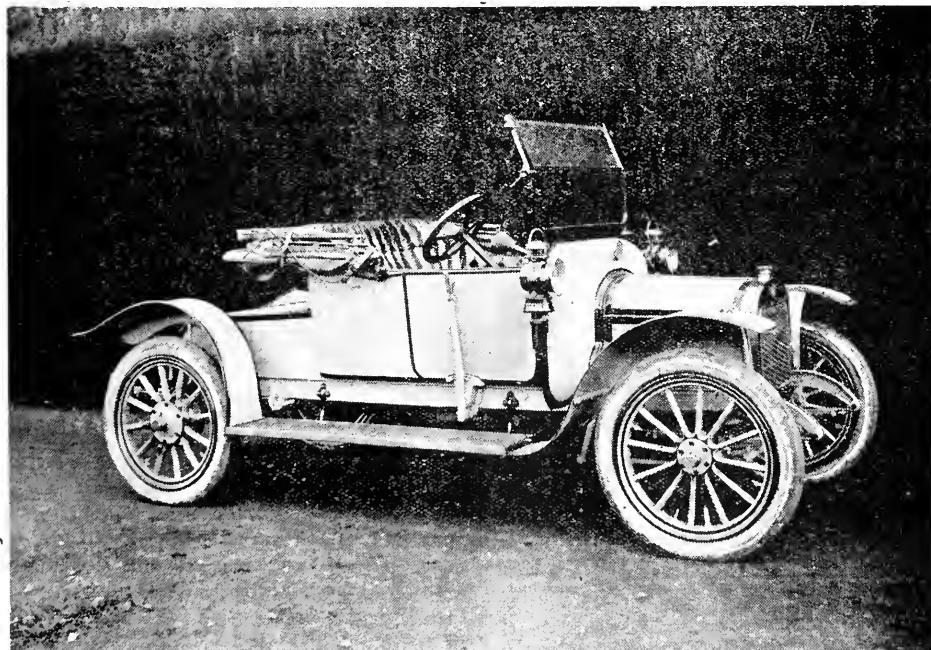
The Development of Motoring.

Motoring has developed so rapidly of recent years that it is almost impossible to imagine anything further being added to the luxury and comfort of the present-day machine, and certainly no other method of travelling is productive of such satisfactory results, under the most varied conditions, as that afforded by the automobile. The important position the motor car occupies in everyday life has been determined by its marked superiority over all the other forms of locomotion, which it has displaced, from the standpoint of utility. In the past, certain sections of the public were of opinion that the attention bestowed upon automobiles was something in the nature of a craze, and destined to be short-lived, and some even predicted a tremendous slump as an attendant result. Those, it may be remarked, who anticipated such a condition of affairs in the motor business, and perhaps postponed their purchases accordingly, in the hope of benefiting by reduced prices, have now to admit that the manufacture of automobiles is an established fact, having long since passed the stage of experiment, and is worthy to rank among the world's chief industries. An insight to the organisation, characteristic of the great factories, would come as a revelation to the sceptical and uninitiated person in things automobile. For example, the South

African manufacturer's representative, and other recognised agents, in widely different parts, are instructed to inform the various makers of the approximate number of cars for any particular season, which can be disposed of within their specified territories, and in this way fairly accurate estimates of the year's output can be gauged, thereby obviating over-production. This is an important feature, which enables the manufacturer to keep reasonably within the demand and specialise his effort to a great extent. The popularity accorded the motor car to-day, from the points of view of convenience and pleasure, has been reached owing to its undoubted reliability, which in turn reflects a perfection in manufacture. This industry has survived all criticism, and is unique in that from the earliest days no tendency to flag has been manifest in this great world business. What proportions it may yet assume must be entirely left to the imagination. If comparisons, however, are made, it will be found that in Johannesburg alone, for example, despite the immense number of cars in daily use, that merely one in every ten, who can afford the luxury of an automobile, is in actual possession of this machine. Assuming this estimate to be correct, the field of opportunity in the commercial capital of the Union is, therefore, hardly scratched, so to speak. The motor, according to one writer, by establishing

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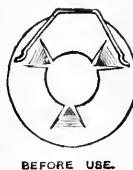
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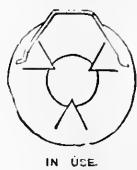
new facilities, has opened up new activities, and created new tastes. To the thrill of speed, and the fascination of control, could be added, in endless fashion, the novel impressions formed by the car.

A Commercial Motor-Users' Conference.

In view of the intelligent progress disclosed in a brief retrospect of the commercial motor vehicle in South Africa, and the rapid strides which will further characterise it, when due recognition is given to its facilities, the time may be considered as opportune for the holding of a conference for the discussion of the many problems of the freight automobile; as by such course alone can any definite understanding be arrived at in regard to the most economical working basis. At present many users are not quite clear of the profit accruing by the adoption of the motor wagon, while all probably agree on its advantages over the methods of the horse-delivery vans. The great questions, which fuel, lubricants and general maintenance have given rise to, however, in countries largely adopting the commercial wagon, have never been satisfactorily answered in these parts. At another time we hope to point out the value of an association, which, it may not be premature to suggest, might be organised, to protect the many interests of commercial vehicle-users. With the growth of heavy motor traffic in Johannesburg and South Africa generally, special regulations, for instance, will be introduced for its proper control, and the views of an



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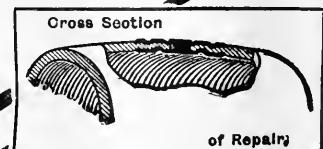
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association in this important matter would greatly assist the authorities, say, towards the improvement of traffic conditions, by suggestions, from personal observation, with a view to preventing congestion, etc. Within the sphere of such an association might also be included the imparting of valuable advice to commercial houses, and individual traders, contemplating a change in their means of transport.

Rules of the Road, etc.

It is held by some that under certain conditions there is no legal rule of the road, which is merely a matter of custom, the circumstances of the case largely deciding whether the driver of a vehicle, which is on the wrong side of the road, and becomes involved in an accident with another vehicle, is guilty of negligence. The local authorities, however, it is well to remark, have distinctly different views on this question, and hold that the driver is responsible for any damage resulting, by the mere fact of being on the wrong side of the street, in the absence, we should say, of clear evidence to show the position he so occupied, could be directly attributed to the other vehicle. The manner, however, in which negligence is regarded differs greatly in civil and criminal law, and a driver, who has been held not liable for damage in a civil action, based on the results of a collision, has strangely enough had his licence endorsed. It should be pointed out, however, that the drivers of both vehicles in the collision referred to had been negligent in handling their cars, hence neither could obtain the redress applied for. On the other hand, under similar circumstances, both can be justly convicted in the criminal court of driving to the public danger, and their respective licences endorsed, without any suspicion of an injustice being done.

"Here and There."

The air seems full, as it were, of motor legislation, and the public are more than ordinarily interested in automobilism at the present time. Recognising, however, how largely numbers of the community rely for information in this wise on the Press, the co-operation of this powerful factor might

be solicited in giving the many subjects germane to the pursuit of motoring, their proper value.

* * * * *

The assistance which might thus be afforded would be appreciated to the full by the motorist. By way of illustration, the Press could influence largely the authorities were the revision of the absurd and ancient regulation governing the speed limit given the prominence it deserves. The Press, from the other standpoint, could also exercise a leniency in the matter of jumping at too hasty conclusions when setting forth motor accidents, and treating matters of real importance in a less cursory fashion than is customary. It will be remembered that the President of the T.A.C. in the course of an address to members last year alluded in no uncertain terms to the alarmist nature of headings in the local Press and depreciated the unusual stress laid upon motor accidents. His commendable remarks, however, have not evidently been given the respect due to them, for one finds much space devoted to trifles, while the ordinary motor accident is treated in quite a sensational manner in some of the unbalanced journalism, with which we are familiar.

* * * * *

The ease with which the ordinary cyclist can deflect his machine, even at an acute angle, and deviate from the course he pursues, without giving any indication to the motorist travelling in rear of such intention, constitutes a danger which many drivers fail to realise. Due warning should in all cases be given by the motorist when overtaking members of this most inconsiderate section of road users, and as wide a berth as possible be considered, to allow for the erratic swerving, so characteristic of the push cyclist.

* * * * *

The automatic cab whistle is the latest invention, which is being adopted in some European cities. The instrument closely resembles the ordinary fire-alarms familiar to street corners. They are connected with the nearest garage, and

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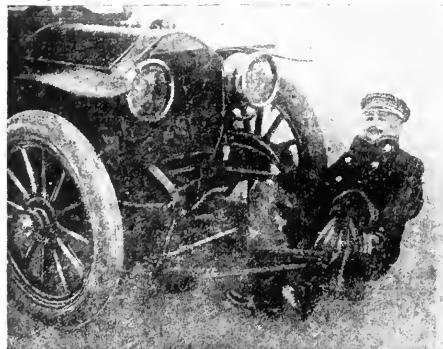
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anyone requiring a cab deposits a shilling in the slot. Simultaneously with this action an electric lamp instructs the person in charge of the nearest stand where a cab is required, the party requisitioning meanwhile taking up position at the "call-box." The deposit, it may be remarked, is deducted from the subsequent fare registered.

* * * *

Inventors from time to time have endeavoured to patent devices, with the object of lessening the number of motor accidents. The most noteworthy of the many contrivances



in use to this end, is illustrated by the photograph, here reproduced, and consists of a bar between the front wheels of the car, which on being brought into contact with the wayfarer, springs open like the jaws of a scissors, and holds

the person until the car can be stopped. The idea is certainly a great improvement on devices heretofore in use, as instead of knocking down the pedestrian run into, this device grips him and carries him along in safety, as pointed out.

New Companies.

The Registrar of Companies, in his report for the month of September, supplies the following list of companies registered and other information:—

The Kismet Gold Mining Co., Ltd.; capital £500.
B. Cunes and Rikkind, Ltd.; capital £2,000.
Leon Levenson's Studios, Ltd.; capital £600.
The Consolidated Fisheries, Ltd.; capital £2,501.
The South African Mining Directory, Ltd.; capital £1,000.
Cape Peninsula Tins, Ltd.; capital £15,000.
Golden Hills Proprietary Mines, Ltd.; capital £10,500.
Palmer's North Rand Gold Mining Co., Ltd.; capital £7,000.
Douglas Grossmith & Co., Ltd.; capital £5,000.
The Mines Equipment Co., Ltd.; capital £500.
Rand Mercantile and Trust Company, Ltd.; capital £100.
Native Recruiting Corporation, Ltd.; capital £2,500.
Ussher, Limited; capital £3,000.
The South African Alkali, Ltd.; capital £20,000.
The Inter-Colonial Building Society and Investment Corporation, Ltd.; capital £5,000.
The African Mining, Finance and General Agency, Ltd.; capital £10,000.

Notices of Reduction and Increase of Capital.

The Benoni Exploration Co., Ltd.; increased from £1,500 to £2,500.
Machavie Gold Mining Co., Ltd.; increased from £72,000 to £85,000.
The Benoni Exploration Co., Ltd.; increased from £2,500 to £3,500.
Machavie Gold Mining Co., Ltd.; increased from £60,000 to £72,000.
The New Rand, Ltd.; increased from £136,457 to £139,207.
Fez Syndicate, Ltd.; increased from £2,000 to £4,000.
West Rand Fresh Meat Co., Ltd.; increased from £1,500 to £3,000.
The National Diamond Prospecting and Developing Syndicate, Ltd.; increased from £7,500 to £30,000.
Lamb, Raphaely & Co., Ltd., Johannesburg; increased from £2,000 to £3,000.
The National Diamond Prospecting and Developing Syndicate, Ltd.; decreased from £20,000 to £7,500.

Companies in Liquidation.

The following companies have been placed in liquidation:—

J. A. Levin & Company, Ltd.
Union Investment and Finance Company, Ltd.
Hardwoods, Ltd.
The Lyceum Theatres, Ltd.
Clarke Brothers & Brown, Ltd.
The Durban Beach Bioscope and Entertainment Company, Ltd.
George Ford, Ltd.
Volksrust Roller Rink, Ltd.

NOURSE MINES, LIMITED.

(Incorporated in the Transvaal.)

NOTICE TO SHAREHOLDERS.

NOTICE is hereby given that the adjourned Sixteenth Annual Ordinary General Meeting of Shareholders will be held on WEDNESDAY, 4th DECEMBER, 1912, at 11 a.m., in the Board Room, The Corner House, Johannesburg.

By Order of the Board,

RAND MINES, LIMITED, Secretaries.

S. C. STEIL, Joint Secretary.

The Corner House,
Johannesburg,
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After providing the premiums on debentures redeemed and a balance of loss on sale of investments, **United Rhodesia Goldfields** the operations of the year to July 31 show an adverse balance of £4,184. The amount to credit of profit and loss account has been further reduced by £11,000 written off the cost of shareholdings, and now stands at £8,390. During the year the company paid off £30,600 of debentures, reducing the amount outstanding to £69,400. Development work on the properties belonging to the company or under option totalled 6,310 ft. for the year. The Golden Kopje property was sold to the Golden Kopje Proprietary Company for £15,000 shares and £5,000 cash, and the King's Daughter and Violet claims were leased until the end of August, 1914. The company's engineer, Mr. C. E. Parsons, strongly recommends a development of the policy of tributary by giving assistance to tributaries, by which means work is done at a small cost to protect the ground, and discoveries may be made. The company has a large holding in Rhodesia Lands, Limited, and reports that that company has during the year sold 11,168 acres at the satisfactory average of 19s. 9d. per acre.

* * * * *

As was only to be expected, Mr. T. F. Daglish, who presided at the annual meeting of the Welgedacht

Welgedacht Prospects. Exploration Co., held in London in mail week, referred to the excellent results secured by the adjacent propositions on

Modderfontein by Geduld and by Brakpan, and stated: "It is possible we may be in a position before very long to lay some proposal before you for the exploitation of the gold section." The provision of sufficient capital to permit of resumption of work on the gold section is receiving the Board's attention, and since Welgedacht is in such excellent company we anticipate sinking in the shaft shortly will be resumed. The company possesses on the freehold farm of Welgedacht a large and compact mining area equal to 1,240 gold claims. Under this area the main reef formation has been proved to exist by a series of boreholes, one of which, situated about the centre of the mynpacht, struck the reef at 1,908 ft.—a comparatively shallow depth—the figures of the core assay being 1 oz. 6 grs. over 10 ins. Shareholders who have followed the company's operations for the past year or two will remember the difficulties which were encountered in the shaft sinking. The broken nature of the ground necessitated double timbering and concreting, while the continual trouble from water caused constant stoppages in the operations, and culminated in an enormous influx, stated by the consulting engineer to approximate 1,500,000 gallons daily. Finally in October last the shaft sinking was stopped at a depth of 724 ft. In view of the limited resources of the company it was considered unwise to continue these operations under such adverse conditions. Welgedacht, like the Apex Mines and Rand Collieries, is a coal mining proposition as well as a colliery. Regarding that part of the company's business which has engaged the greater part of attention, namely, the coal mining, the chairman remarked: "You may remember that during the company's earlier operations numerous rolls and faults were encountered in opening up the seams, whilst the great proportion of the coal worked left much to be desired on the point of quality. For these reasons the working costs were very high and the monthly loss increased to such an extent that, in January, 1911, it was decided by the Board to discontinue the raising of coal, to cede the company's allotment to the Coal Owner's Association for £250 per month and to search for a more settled area and a better quality coal. You will see from our report that this policy has been successful, and we can, I think, feel satisfied now that for some years ahead we shall be able to produce our allotted tonnage of 10,500 tons per month. On this basis the colliery should show a satisfactory profit. I may add that the work involved in opening up the new coal area and of obtaining a largely increased output has been carried out with great economy." The directors are considering the provision of fresh capital for the gold section of their property.

Knight Central: Quarterly Report.

Tons melted, 69,820; gold recovered, 20,386.379 ozs.; revenue from gold, £85,449; total working expenditure, £69,279; cost per ton milled, 10s. 10.14d.; profit for quarter, £16,170; profit per ton milled, 4s. 7.58d.; capital expended, £9,871. On shaft sinking and stations, the east shaft has been sunk 153 $\frac{1}{2}$ ft. to a total depth of 4,380 $\frac{1}{2}$ ft., or to 151 ft. below the 15th level. The last 50 $\frac{1}{2}$ ft. have been sunk in dyke. One hundred and sixty-five feet of sills have been put in to a depth of 1,308 ft. The west shaft has been sunk 190 $\frac{1}{2}$ ft. to a total depth of 4,289 ft., or to 346 $\frac{1}{2}$ ft. below the 13th level. The last 292 ft. have been sunk in dyke. Ninety feet of sills have been put in to a depth of 4,065 ft. On development work there were driven, risen, sunk and on prospecting work a total of 2,305 ft. The reef values were:—Exclusive of main cross-cuts, ore passed and prospecting work, 1,280 ft., or 83.81 per cent., of the development work has been on reef. Altogether 1,665 ft. have been sampled, comprising 889 ft., or 53.0 per cent., averaging 8.03 dwts. over an estimated stoping width of 62.84 ins., and 785 ft., or 47.0 per cent., averaging 1.88 dwts. over 62.12 ins. In this former total is included 345 ft. of main reef at 7.50 dwts. over 57.72 ins., 525 ft. of south reef at 8.34 dwts. over 66.62 ins., and 10 ft. of main reef leader at 7.91 dwts. over 41 ins. **Ore Reserves.**—The payable ore exposed as at 30th June was 658,000 tons at 6.05 dwts. over 60.77 ins.; payable ore exposed or developed during quarter ended 30th September was 45,500 tons at 6.90 dwts. over 70.63 ins.; making a total of 706,500 tons at 6.11 dwts. over 61.36 ins.; less ore mined from payable blocks during quarter ended 30th September, 1912, 52,900 tons. The total ore reserves at 30th September were 653,600 tons at 6.11 dwts. over 61.36 ins. Extensions have been made to the change room for Europeans at the west shaft, and a change room for natives has been built at the east shaft. What is known as the Simmer and Jack dyke has been intersected in both the west and east inclining shafts. At the west shaft a borehole is being put up to determine its exact thickness, and also to locate the position of the upthrown portion of the reef.

New Cape Companies.

Irvin & Johnson, Ltd.; registered office, Capetown. Directors: G. D. Irvin, C. O. Johnson, W. B. Eigemann and J. G. v. d. Horst. Capital, £125,000. Registered, August 31st.

The Ondtshoorn Theatre Co., Ltd.; registered office, Ondtshoorn. Subscribers: V. H. Noith, W. L. Yeo, J. Warren and four others. Capital, £5,550. Registered, August 6th.

The Hopetown Irrigation and Farming Co., Ltd.; registered office, Hopetown. Directors: J. G. B. Watney, P. J. van Coller, L. J. de Jager and three others. Capital, £3,000. Registered, August 16th.

Magic Foot Draft Co. (S.A.), Ltd.; registered office, Capetown. Subscribers: A. Gray, W. Barlow, D. Easton, and four others. Capital, £6,000. Registered, August 15th.

Carlton Service (Africa), Ltd.; registered office, Capetown. Managing Director, James Inglis. Capital, £1,000. Registered, August 24th.

The East London Engineering Co., Ltd.; registered office, East London. Managing Director: F. D. Lingwood. Capital, £8,000. Registered, August 15th.

INCREASE OF CAPITAL.

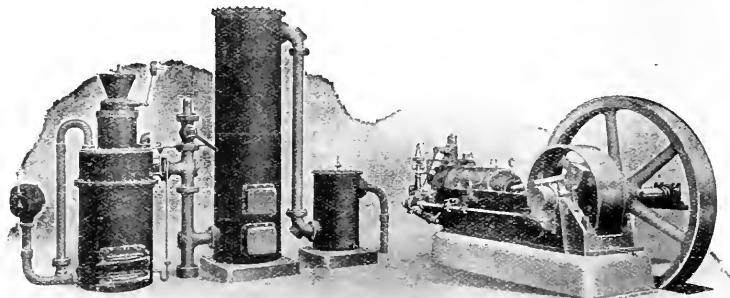
Union Meat Co., Ltd.; from £6,500 to £25,000. Registered, August 23rd.

It has come to our notice that unscrupulous advertising agents in America, acting, presumably, in conjunction with some unidentified firms in this country, are offering rates to advertisers below our fixed tariff. As this is obviously a serious handicap to our accredited agents, and inimical to our interests, we trust that oversea advertisers, actual and prospective, will accept our assurance that such rate-cutting offers made on behalf of our publications are wholly unauthorised, and contrary to our principles and practice.

The Special 21st Anniversary Number of the "South African Mining Journal" is now on sale at the various branches of the Central News Agency. The number is, of course quite distinct from the ordinary weekly issue of the paper, and is published at 3s. 6d. per copy. All orders will be executed by the Central News Agency.

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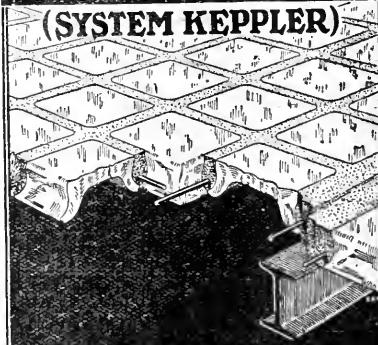
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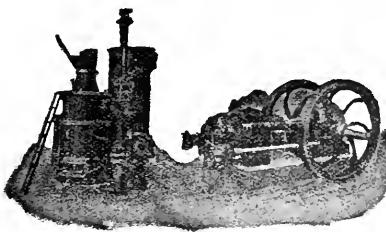
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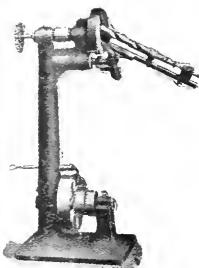
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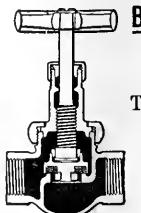
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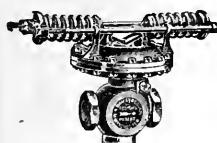
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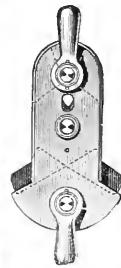
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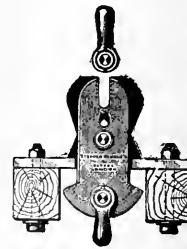
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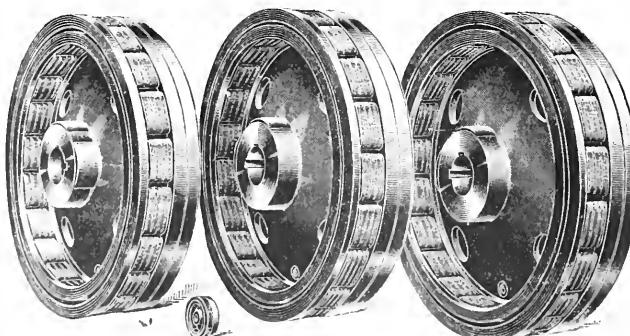
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